

U.S. ARMY - BAYLOR UNIVERSITY GRADUATE PROGRAM IN
HEALTHCARE ADMINISTRATION

A STUDY OF ADVANCED PRACTICE NURSES (APNs): FACTORS
INFLUENCING JOB SATISFACTION AND INTENT TO REMAIN IN
THE ARMY MEDICAL DEPARTMENT

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BY

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ABSTRACT

The purposes of this study were to: (1) identify major tasks and responsibilities of advanced practice nurses (APNs) assigned in Army Medical Department (AMEDD) facilities, (2) determine APNs' job satisfaction and intention to remain in the AMEDD until eligible for retirement, and (3) examine relationships between job satisfaction (to include subscales of satisfaction with clinical time available, quality of care provided, rewards, support staff, personal time available, and overall satisfaction), autonomy, collaboration, and intent to remain in the AMEDD.

The sample consisted of 85 APNs in six AMEDD facilities, representing the categories of certified registered nurse anesthetist, nurse practitioner, certified nurse midwife, clinical nurse specialist, and community health nurse. A seven part questionnaire was distributed through a point of contact at each of the six facilities to APNs. Three parts of the questionnaire were adapted with permission from the researchers in the AMEDD Primary Care Demonstration Project and used to investigate satisfaction, autonomy, and collaboration. The remaining four parts of the questionnaire examined socio-demographic variables, intent to remain in the AMEDD, APNs' perceptions of the APN role as it impacts promotion opportunities, and major tasks and responsibilities of APNs. Descriptive statistics (frequencies, measures of central tendency, and correlations) and inferential statistics (using linear regression) were used in the analysis.

The majority of respondents indicated an intent to remain in the AMEDD and most were moderately satisfied with the APN role in the AMEDD. Reward was found to be the most statistically significant predictor of intent to remain, although there were positive correlations between intent to remain and the predictor variables of overall satisfaction, support staff, and clinical time. Satisfaction with quality of care and autonomy were significant predictors of overall satisfaction. These findings are discussed and recommendations for future research are included. Findings of this study may facilitate a better understanding of the current use of APNs in the AMEDD. Understanding variables that influence APNs' intentions to remain in the AMEDD may assist the Army Nurse Corps in enhancing assignment opportunities that would increase satisfaction and retention. An increased understanding of the tasks and responsibilities of APNs may also assist the Army Nurse Corps in re-examining the utilization of APNs to more fully engage them in the delivery of cost effective, accessible, and high quality care.

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CHAPTER 1

INTRODUCTION

Managed care is changing the emphasis of health care in the United States. The focus is moving from highly technological, curative interventionism to prevention, lifestyle management, and care. "Advanced practice nurses (APNs) are the experts in this orientation" (Minarik 1993, 108). Studies have demonstrated APNs can provide many of the basic services and much of the primary care currently provided by more costly physicians (Schaffner, Beymer, and Wiggins, 1995).

The American Nurses Association defines the advanced practice nurse as an "umbrella term" for all registered nurses (RNs) who meet advanced educational and clinical practice requirements beyond the 2-4 years of basic education in nursing. Four major categories of APNs are identified by the ANA: nurse practitioner, certified nurse midwife, clinical nurse specialist, and certified registered nurse anesthetist, also known as NP, CNM, CNS, and CRNA respectively (American Nurses Association 1993).

Advanced practice nurses are assigned in the Army Medical Department (AMEDD). Similar to the civilian health care sector, the AMEDD is faced with the challenges of increasing costs and problems with access to services. The military managed care program, TRICARE, is designed to improve beneficiary access to high quality care while controlling costs of providing health care services to approximately 8.3 million beneficiaries. Costs for services in 1994 were

estimated at over \$15 billion annually. Unlike the civilian health care sector, the AMEDD has a dual mission of providing medical services to the armed forces during peacetime and war and also providing care for families of active duty personnel, military retirees, and their dependents, and survivors (GAO 1995).

Department of Defense medical personnel totaled 274,000 in 1995 with 135,000 active duty and 48,000 civilians. The number of medical personnel has decreased approximately 8% between 1991 and 1995 and is expected to decrease another 8% by 2000. Although the decrease in the Military Health Services System (MHSS) budget has leveled off to 1% each year since 1991, MHSS spending has consumed a greater proportion of the total defense budget, growing from 4% of the total in 1990 to 6% in 1995 (GAO Report March 1995). It is likely that more cuts in MHSS personnel strength will occur. Decisions regarding personnel structure will be based on many factors, but must include a review of utilization and workload of all health care providers, including APNs.

Jennings (1993) stated that the role of the nurse in managed care environments, civilian and military, is not clearly defined. She described five possible templates for defining the nurse's role in the MHSS with the advent of military managed care and specifically cites advanced practice nurses in two of these templates. Jennings identified the challenge for military nurses as clearly define the role of the nurse in the managed care environment, "so as to benefit the patient, the organization, and the professional nurse," taking into consideration "nursing's contribution to access, quality, and cost containment" (Jennings 1993, 826).

A review of the literature indicates APNs provide cost effective, quality care that is

accessible to patients. The literature also describes the education and training beyond the basic bachelor's degree in nursing required to produce APNs. Selected active duty AMEDD nurses are funded for graduate education programs in advanced practice nursing through the Army. In addition to questions regarding utilization, questions can be raised regarding turnover of those APNs who have been funded. In addition, even if an APN in the AMEDD was not funded for school, (i.e., the APN personally paid for nursing education beyond the bachelor's degree) turnover can be costly to the AMEDD in terms of recruitment of replacements. For certified registered nurse anesthetists, an APN group experiencing chronic shortages in the AMEDD, retention is critical.

APNs satisfaction with their roles may be related to retention on active duty. Although there are many studies on job satisfaction and retention of registered nurses, primarily in acute care settings, no published studies were found on retention and job satisfaction of APNs in civilian or military health care systems. It is unclear if APNs are leaving the AMEDD in large numbers. However, as Johnson stated, "in some settings their intent to leave may be high enough that increased turnover may be next" (1995, 1). Monitoring intent to leave is needed as high intent to leave has been identified as a significant indicator of pending turnover problems (Curry 1985). Johnson (1995) also cautioned that turnover rates alone may be deceptive. She stated that nurses may remain in an organization even when dissatisfied, until more job opportunities become available. If turnover is low, it must be determined if it is related to lack of other positions for nurses or high job satisfaction. The importance of identifying levels of satisfaction/dissatisfaction and intent to stay, especially in this era of turbulence in health care organizations, is recommended

in order to prevent shortages in nursing personnel that have historically occurred following periods of growth in demand for nursing services (Johnson 1995).

Many of the forces driving changes in health care systems, to include the AMEDD, are causing health care leaders to reexamine the utilization of nurses. With an emphasis on ambulatory care, home care, preventive health, and patient education, APNs may experience dramatic changes in the way they are used and in the numbers of APNs required to meet the needs of changing health services systems.

Conditions That Prompted the Study

Studies support the value of APNs in the civilian health care arena. The literature also illustrates the expanding use of APNs in managed care environments. Although there are many studies on job satisfaction of registered nurses in hospitals, there are few studies examining APNs' job satisfaction and intention to remain in the position. No published studies were found on job satisfaction of APNs and their intention to remain in the role in a managed care environment.

Although APNs have been used in the AMEDD for many years, few studies exist on the scope of their utilization, job satisfaction, and intent to remain in the AMEDD. Indeed, in 1995, the agenda of the Army Nurse Corps Executive Leaders' Conference included the need to define APN and describe the role of the APN in the AMEDD. Work on this agenda item is incomplete.

The American Nurses Association identifies APNs as practitioners who can provide accessible, cost effective, quality healthcare. Many studies reviewed by the American Nurses Association conclude that there is no significant difference in the outcome between APN and

physician practice. For example, the Office of Technology Assessment found the quality of APN care to be, "as good or better than care provided by physicians" and found that APNs had "better communication, counseling, and interviewing skills than physicians have" (American Nurses Association 1995, p.3).

The American Nurses Association cited the associate dean of the Yale Law School as stating, "Unnecessary restrictions on their [APNs] scope of practice, prescriptive authority, and eligibility for reimbursement actively impairs these providers' proven ability to safely meet the health needs of many of our neediest citizens" (American Nurses Association 1995, p.3).

Although APNs in the AMEDD may not always face the same barriers to practice as their civilian counterparts, many AMEDD facilities do not have APN positions. Anecdotally, ANC APNs often state that they are satisfied with their role when they are assigned to an APN position, but they are dissatisfied with the lack of opportunities for APN assignments. These, often mid- and early-career, APNs in the AMEDD also anecdotally state that they plan to leave, once their obligation for graduate education is met, because they fear their promotion potential is lower than their non-APN peers or they will not be able to remain in an APN role long enough to develop expertise. No studies exist to support this anecdotal information that intent to remain on active duty past the initial utilization tour following graduate education is low.

Statement of the Problem or Questions

Several questions were investigated in this study. First, what are the major tasks and responsibilities of APNs assigned in AMEDD facilities? Second, do APNs in AMEDD facilities

intend to remain in the AMEDD until they are retirement eligible? Third, are APNs in the AMEDD generally satisfied with their jobs? Fourth, is there a relationship between APNs' perception of the quality of care provided in within the facility, clinical time, support staff, rewards, and personal time, and overall satisfaction? Fifth, is there a relationship between quality of care, clinical time, support staff, rewards, and personal time, and intent to remain in the AMEDD? Sixth, is there a relationship between APNs' perceptions of autonomy and collaborative opportunities, and overall satisfaction? Seventh, is there a relationship between APNs' perceptions of autonomy and collaborative opportunities, and overall satisfaction, and intent to remain in the AMEDD?

Literature Review

Historical Perspectives on Roles and Utilization of APNs

Clinical specialization in nursing began in the early 1900s with the development of specialized courses in operating room, obstetrical, and anesthesia nursing. Specialization was viewed as a response to the increasing complexity of nursing care (Sparacino, Cooper, and Minarik 1990). Even prior to that, in 1877, techniques in the administration of anesthesia were taught to nurses, and in 1889, the first formal training program in nursing anesthesia was established at St. Mary's Hospital of Rochester, Minnesota. Nurse anesthetists performed many procedures in World War I and their accomplishments in war led to the rapid growth of the specialty in post-war years. In 1931, the first specialty organization in nursing, the National Association of Nurse Anesthetists was created and, with a name change in 1939, it became the

American Association of Nurse Anesthetists (Garde 1996).

In 1943, the National League of Nursing Education proposed a plan for the development of advanced clinical nurse programs at the graduate level. The plan was marketed as a way to coordinate a continuum of care (Sparacino, Cooper, and Minarik 1990). Following World War II, a growing shortage of nurses led to the federal Nurse Training Act, which provided funding for educational programs leading to the clinical nurse specialist. Clinical nurse specialists serve as consultants, clinical experts, role models for the general nursing staff, and researchers (Mezey and McGivern 1993). Others described the clinical nurse specialist role as, "made up of the following five sub-roles: clinical practice, education, consultation, research, and leadership" (Cram, Alpen, Burger, Cullen, Halm, Harrington, Megivern, Penney, Stenger, and Titler 1996).

The first nurse practitioner educational program began in 1965 to focus on health promotion, growth and development, and prevention of disease and disability. The development of the nurse practitioner role occurred in the context of a U.S. shortage of primary care physicians and the passage of Medicare and Medicaid legislation. Increasing access to affordable primary care was needed and the nurse practitioner role was marketed to assist in filling this need (DeAngelis 1994).

The Merger of Clinical Nurse Specialist, Nurse Practitioner, Certified Nurse Midwife, and Certified Registered Nurse Anesthetist into the Broad Category of APN. When originally designed, the roles of clinical nurse specialist, nurse practitioner, certified nurse midwife, and certified registered nurse anesthetist did not fall under broad category of APN as they do today. The clinical nurse specialist and nurse practitioner roles evolved from different goals. The goals

for the clinical nurse specialist were to improve quality of patient care, keep expert nurses at the bedside, and focus on nursing staff. The goals for the nurse practitioner were to increase access to primary health care by provision of direct patient care. Educationally, the clinical nurse specialist has been grounded in nursing while nurse practitioner clinical education has frequently been provided by physicians in a medical model of practice (Page and Arena 1994).

The role components and practice settings of the clinical nurse specialist and the nurse practitioner also differ. Major components of the role of the clinical nurse specialist include consultation, direct patient care in a clinical specialty, research, education, and leadership. Practice settings are primarily in hospitals. The role components of nurse practitioner include working collaboratively with physicians in performing physical examinations, taking health histories, diagnosing and treating illnesses, and providing patient education. The practice setting of the nurse practitioner is most frequently an outpatient setting (Ray and Hardin 1995).

Although there are basic differences between nurse practitioners and clinical nurse specialists, the distinctions are becoming less clear, and the nursing profession has slowly encouraged a new title, advanced practice nurse or APN. Formal recognition of the commonality of practice was made in 1990 when the American Nurses Association Council of Clinical Nurse Specialists and the Council of Primary Health Care Nurse Practitioners combined to form one council of advanced practice nurses (Schroer 1991). Consensus among nurses has yet to be reached and titles of clinical nurse specialist and nurse practitioner continue to be used but are frequently grouped under the heading of APN (Sparacino et al. 1990). The National Council of

State Boards of Nursing defined advanced practice as:

The advanced practice of nursing by nurse practitioners, nurse anesthetists, nurse midwives, and clinical nurse specialists, based on the following: knowledge and skills required in basic nursing education; licensure as a registered nurse; graduate degree and experience in the designated area of practice which includes advanced nursing theory; substantial knowledge of physical and psychosocial assessment; appropriate interventions and management of health care status (Mezey and McGivern 1993, 5).

An estimated 40,000 clinical nurse specialists and 25,000 nurse practitioners were in practice in the U.S. in 1994. The combined number of clinical nurse specialists and nurse practitioners is significantly less than the 210,000 primary care physicians identified by the American Medical Association (Aiken and Salmon 1994). Specialities falling within the scope of nurse practitioners and clinical nurse specialists include family health, adult health, geriatric/elder care, women's health, pediatric/child care, and psychiatric/mental health (Schaffner 1995).

In 1995, there were 25,000 practicing certified registered nurse anesthetists in the American Association of Nurse Anesthetists, representing 96% of all nurse anesthetists in the U.S. In a 1996 report, researcher found that 81.3% of a data base of 18,086 certified nurse anesthetists practice in metropolitan counties with the largest numbers practicing in counties with a population of one million or more. Only 250 certified nurse anesthetists in the data base practiced in completely rural counties with populations of under 2,500. Certified registered nurse anesthetists administer over 65% of the 26 million anesthetics patients receive in the U.S. each year and practice in all settings in which anesthesia is delivered. Like the nurse practitioner and clinical nurse specialist, a certified registered nurse anesthetist may take on the roles of expert clinician, educator, administrator, manager, researcher, and consultant (Garde 1996).

As of 1990, there were approximately 5,000 certified nurse midwives in the U.S. (American Nurses Association Nursing Fact Sheet 1993). Although much smaller in number than the other groups of APNs, certified nurse midwives practice in all fifty states as primary health providers in hospitals, birthing centers, health maintenance organizations, public and private clinics, and other health care settings. They provide screening, instruction, support, supervision, and direct care services to well women and women with prenatal, labor and delivery, postpartum, minor gynecological, and newborn care needs (Davis 1995).

Evolving Roles of APNs in the U.S.

APNs have responded to the impact of managed care on hospitals. Traditionally, the APN most frequently in practice in a hospital setting has been the clinical nurse specialist who has been challenged to prove his/her value in a cost-containment environment (Higgins 1994). APNs are described by nurse leaders as the "life blood and backbone of nursing" in hospitals, yet they are also acknowledged as expensive resources (Madden and Ponte 1994, 56). Increasingly, APN roles in the hospital have changed from focusing on consultation to focusing on case management (Higgins 1994). As case managers, APNs have contributed to the provision of cost effective, quality care in hospitals through the development of care paths. Care paths (also frequently known as care maps or clinical pathways) provide standardized practice guidelines for health care providers treating high volume and/or high risk patients. Care paths have been cited as effective tools for decreasing lengths of hospitalization and patient complications while increasing staff and patient satisfaction and communications (Weilitz and Potter 1993). In another study of APN involvement with clinical pathways, lengths of hospitalization decreased and patient satisfaction

increased (George and Large 1995). A community-wide approach developed by a group of hospitals in Syracuse, New York, identified APNs as key players in the development, implementation, and monitoring of critical pathways (Aspling and Lagoe 1995).

Although managed care, with its cutbacks and substitution of unlicensed for licensed personnel can be viewed as a threat to non-APN registered nurses, it can also be viewed as a way to advance the roles of APNs in hospitals. "Optimizing the nursing authority allowed by a managed care system could place the nursing profession in full status as the determinant of quality care in the next century" (Hampton 1993, 27). Nurse administrators must foster environments where APNs function autonomously (Barter, Graves, Phoon, and Corder 1995, 78).

APN involvement in ambulatory outpatient settings is well documented. Today's growing community nursing centers with roots in the 1800s, are based on nursing's commitment to providing care for the elderly, poor, and underserved. In 1923, the Frontier Nursing Service, begun in response to a severe physician shortage in rural Kentucky, was financed by a prospective payment system with each household paying a yearly subscription of not less than \$1.00 (Walker 1994). Today, community nursing centers are defined by the National League for Nursing as centers "in which management, accountability, and responsibility for professional practice remain with the nurse" (Saywell, Lassiter, and Flynn 1995, 18). APNs are patient care providers in community nursing centers, approximately 250 of which exist in the U.S., providing increased access to cost effective, quality patient care. A 1991 study of community nursing centers found the overall average cost per patient visit was between \$42 and \$78 (Saywell et al. 1995).

Recent legislation has assisted the growth of services provided by APNs in community

settings. In 1987, the Omnibus Budget Reconciliation Act mandated the creation of community nursing organizations with funding and oversight provided by the Health Care Financing Administration for four demonstration projects begun in 1994 in Arizona, Illinois, Minnesota, and New York. The three year community nursing organization project's goal is to test nurse managed, capitated, and integrated systems of community-based care for Medicare beneficiaries. Initial findings demonstrate patients are satisfied with care (Lamb 1995).

Faculty practice nursing centers such as the center at the University of Rochester, Rochester, New York, advance the organization's managed care goals to provide good quality, cost effective, accessible care. Described as a "center without walls," the University of Rochester program combines urban and rural nurse managed practices. Practice settings include stationary and mobile clinics, schools, child and elder care facilities, and home health. A review of nurse managed centers describes them as effective ways to manage resources and, "produce the work of health care" (Walker 1994, 9).

In a 1986 report by the U.S. Congressional Office of Technology Assessment, APNs (at that time titled nurse practitioners,) were found to have a positive impact on the quality, accessibility, and cost effectiveness of health care. Patient satisfaction with APN care was high. Quality was found to be comparable with that provided by physicians in resolving patient issues and in prescribing practices. The study concluded, "within their area of competence, NPs [nurse practitioners] provide care whose quality is equivalent to that of care provided by physicians" (Sellards and Mills 1995, 65). The Office of Technology Assessment report found APNs to particularly improve access to primary care in rural areas and inner city areas, locations

traditionally underserved by physicians. In their report of certified nurse midwives, the Office of Technology Assessment stated that, "Certified nurse midwives manage normal pregnancy safely and as well or better than MDs, achieved lower rates of low birth-weight infants, and had shorter inpatient stays for labor and delivery than similar patients of obstetricians" (American Nurses Association Fact Sheet 1993, 2).

In a meta-analysis of 53 studies comparing APNs to physicians, the American Nurses Association found APNs provide: more health promotion activities, 8% lower costs of lab tests, and higher scores on quality care indicators of completeness of care processes, and the same ratio of prescription medications. Further, the average cost per APN visit was 39% lower than the cost for a physician (Schaffner 1995, 41).

Barriers for APN Utilization. Virginia Trotter Betts, former President of the ANA states, "The goals of universal access, cost containment, and a greater emphasis on primary health care services cannot be achieved unless you remove the shackles that hobble thousands of front line providers" (Betts 1993, 1). Challenges to the full use of APNs are identified as restrictions on licensure, third party reimbursement, access to medical facilities, and access to physician backup services. Only Alaska and New Mexico allow for truly independent practice and do not have restrictive regulatory requirements for APN/physician collaboration (Sellards and Mills 1995). Additional regulatory barriers include the lack of consistency among states on the requirements for APN practice. This is a particular problem for APNs working in "border communities" crossing state lines (Sellards and Mills 1995, 69).

Issues regarding prescriptive authority and admitting privileges are related to both

professional and legislative barriers. Seventy-eight percent of the states now have some prescriptive authority for APNs. However, among the states, there is no uniform legislation or method of implementation (Bailey and Snyder 1995). APNs are rarely granted admitting privileges in hospitals. All hospitals that do grant admitting privileges require direct supervision by a house physician. Only the District of Columbia and the state of Washington have laws prohibiting discrimination with regard to admitting privileges (Sellards and Mills 1995).

Another barrier to effective role implementation and public understanding of the role of the APN relates to nomenclature. The title of APN has only recently been promoted by the nursing profession as a universal title for nurses in advanced roles. For now, states continue to use the titles clinical nurse specialist, nurse practitioner, and APN in various ways. This leaves the public, legislators, and other health care providers confused (Schroer 1991).

Professional barriers continue to be related to the debate between nursing and medicine regarding the effectiveness of APNs (Aiken and Salmon 1994). Studies show APNs are underused because of restrictions largely related to the perceived threat of APNs by physicians, as APNs are low cost providers (Minarik 1993). APNs in utilization review roles may pose a particular threat to physicians. "A primary objective of UR [utilization review] is to monitor, and provide appropriate incentives to influence, the use of health care services. Utilization review also serves to determine the extent to which such use meets established criteria and standards, particularly for hospital care" (Williams and Torrens 1993). Physicians and APNs in utilization review positions may enter into adversarial relationships, especially when APNs are employed by third party payers and use standardized guidelines to monitor the care provided by physicians.

One managed care administrator suggested that utilization review practices must, "get rid of the 1-800-DAMN THE DOCTOR mentality" that is so prevalent (Mendenhall 1994, 40).

Internal barriers to full implementation of the APN role exist. Some APNs, traditionally identified as clinical nurse specialists, are opposed to any practice that would appear to abandon nursing for medical-based practice. Others see roles such as house staff, in hospitals that lack physician generalists, as windows of opportunity for APNs (Minarik 1993).

Another barrier to full utilization of APNs is lack of direct reimbursement. Few insurers reimburse APNs directly, although the federal government does and has since 1978. In 1978, Public Law (P.L.) 95-457 authorized the Civilian Health and Medical Program for the Uniformed Services (CHAMPUS) to reimburse certified nurse midwives and nurse practitioners and the federal government became the first purchaser of health care services to reimburse APNs directly. Since 1978, CHAMPUS has provided for all APNs. In 1980, Medicaid began direct reimbursement of certified nurse midwives and, in 1982, began to include nurse practitioners. However, since Medicaid is a joint state-federal program, with states varying in their reimbursement rates, Medicaid reimbursement rates of APNs are not standard throughout the U.S. (Sellards and Mills 1995). In a recent report by Haber on Medicare reimbursement for clinical nurse specialists, she stated that, "In each of the past 2 [two] years this advanced practice provider category has been eliminated from the proposed Medicare reimbursement legislation, supposedly because of the additional cost that the Congressional Budget Office maintained would have been added to the bills" (Haber 1996, 167).

Economic Impact of APNs on Health Care Organizations

Traditionally, many nursing roles and tasks have been included in the price of "doing business" in health care organizations. It has only been in recent years that a greater emphasis has been put on placing an economic value on nursing services. Although some nursing roles may appear costly, these same roles may be revenue generating if they save more money than they cost. APNs who provide easily quantifiable patient care services, i.e., those who provide direct care to specific patients at specific times (such as nurse practitioners), can more easily document their economic value than can most clinical nurse specialists. APNs who traditionally have less well defined practices within a health care organization.

As early as 1978, the efficiency and cost of primary care by nurses and physicians was researched (Greenfield, Komaroff, Pass, Anderson, and Nessim 1978). Results of this study included findings that nurse practitioners and physicians assistants, using practice protocols, save more costly physician time, thereby reducing reduce cost. In 1991, Conway-Welch, in the course of doing her literature review, found that the use of nurse practitioners decreased laboratory charges, saved physician time, reduced emergency room services, increased patient access, reduced costs, and maintained or increased quality of care received by patients. She found a clear relationship between the cost-effectiveness of a nurse practitioner and one's salary, which is about two-thirds less than that of a physician. She also concluded that 50-90% of the primary care provided by physicians could be provided by a nurse practitioner. In a 1994 report of market costs of short-term physician and nurse anesthesia services, the author found the average cost for an anesthesiologist was \$133 per hour versus \$86 per hour for a nurse anesthetist (Johnstone

1994). Johnstone states, "Reliable outcome studies comparing physician and certified registered nurse anesthetist services have not been done and may not be possible" and "market costs may be the best determinations of value and the figures most useful for economic modeling and policy analysis" (1994, 132).

As stated previously, clinical nurse specialists' economic impact on organizations is more difficult to evaluate. Edwardson, citing the documented cost-effectiveness of nurse practitioners states, "The task before us now is to produce equally rigorous evidence about other nurses practicing in expanding roles..." (Edwardson 1992, 163). A survey of 636 staff nurses' found that the clinical nurse specialist was viewed as valuable, with the physical presence of a clinical nurse specialist on a nursing unit viewed as important. However, research on clinical nurse specialist effectiveness and impact on patient outcomes is minimal and provides mixed findings (Nuccio et al. 1993). Nugent suggested that clinical nurse specialists are the "most qualified" to implement the role of case manager and that this will result in cost savings. "Utilizing the clinical nurse specialist as a case manager in a collaborative practice empowers the clinical nurse specialist to function in an advanced practitioner role and bridges the gap between quality and cost of care" (Nugent 1992, 110). In a 1993 article, Ferraro-McDuffie, Chann, and Jerome warned that the future of clinical nurse specialists is in "jeopardy" with some organizations having eliminated clinical nurse specialist positions because of lack of documentation on effectiveness of their practice

In a study of 26 health care systems and multi-specialty group practices including all categories of APNs (nurse practitioners, clinical nurse specialists, certified nurse midwives, and

certified registered nurse anesthetists), 11 had a tool in place to measure the cost-effectiveness of care provided by APNs. "Significant savings" by using APNs were reported (Schaffner, Ludwig-Beymer, and Wiggins 1995). Nichols discussed the estimated costs of underusing APNs and proposed a methodology to estimate these costs. He stated that although there are several reasons for underuse, the result is that "fewer health care services are delivered at higher prices than are necessary" (1992, 343). Similarly, Buppert stated that APNs must provide lawmakers, bureaucrats, and business people with "hard facts and figures" illustrating that APNs are "value-added providers" (1995, 43). Cost data from the Texas Association of Nurse Anesthetists point to the cost effectiveness of certified registered nurse anesthetists, nurse midwives, and nurse practitioners as "alternative providers for physicians in the delivery of health services wherein the legal scopes of practice of these providers overlap" (Gunn 1996, 52).

Current Roles and Impact of APNs in the AMEDD

Kennedy, Hill, Adams, and Jennings stated that APNs in the Army Nurse Corps, "function as nurse practitioners, clinical nurse specialists, nurse midwives, community health nurses, and nurse anesthetists" (1996, 34). This differs from civilian healthcare literature by the addition of community health nurses to the grouping of APN. Army community health nursing was established in 1949 and is "dedicated to preventing or minimizing hospitalizations and other losses in productive time due to illness" (FM 8-24, 1-1). Including community health nurses in the grouping of APNs, Kennedy, Hill, Adams, and Jennings described the APN role in the Army Nursing Practice Model as one which involves administrative functions: "This unique twist requires the APN's and the head nurse's roles to be clearly defined. The APN assumes

responsibilities and accountability that extend across units and transcend inpatient and outpatient boundaries" (Kennedy, Hill, Adams, and Jennings, 1996, 34).

There are few published studies specific to roles and impact of APNs in the AMEDD or in the military health services system in general. A study by Goldberg et al. (1981) found that physician extenders (nurse practitioners and physician assistants) in the U.S. Air Force delivered the same quality of care as physicians to a large population of patients. A 1993 study by Ahrens focused on the organizational restructuring of nursing in the U.S. Navy and describes a role for the ambulatory clinical nurse specialist with a title of Special Assistant for Ambulatory Nursing. In another article on Navy nursing, the authors described their research on the perceptions of collaborative practice between Navy nurses and physicians in the intensive care unit setting (King and Lee 1994). However, there was no indication that the nurses in the study were APNs. Williams and Blue (1994) studied the impact of home visits by military nurses to chronically ill medical patients and found readmission rates decreased, although they did not state whether the home visits were provided by APNs.

Jennings (1993) discussed role development for nurses in the DoD managed care environment. She recommended examining the feasibility of using nurse practitioners as primary care providers, similar to the increased use of nurse practitioners in civilian managed care settings. Jennings also voiced concern that the clinical nurse specialist role in the military is vulnerable to cutbacks because of inconsistency of role implementation of these expert clinicians and lack of quantification of their contributions related to cost, quality, and access.

Research by Davis (1995) provided information on certified nurse midwives in the

military. Certified nurse midwives have been utilized in the military services for over 20 years, with the Air Force being the first service to use them. With 17 certified nurse midwives in the Army in 1995, the AMEDD has the smallest number of certified nurse midwives as compared to 47 in the Air Force and 22 in the Navy. In addition to the 17 certified nurse midwives in the Army in 1995, six Army nurses were attending midwifery schools. Certified nurse midwives are utilized at Fort Wainwright, Fort Knox, Fort Campbell, and Fort Hood and expansion to other sites is under examination. Fort Hood and Fort Campbell also have civilian certified nurse midwives (Davis 1995).

According to Davis (1995), significant economic advantages are associated with the use of certified nurse midwives in the military. In addition, Davis cited studies that demonstrate high levels of patient and staff satisfaction as well as cost effectiveness with certified nurse midwives in the Navy's 1993 Nurse Midwifery Demonstration Project; shortened lengths of stays of low-risk post partum patients cared for by certified nurse midwives in Air Force and Army facilities; and cost avoidance of CHAMPUS funds by the opening of an Army Midwifery Center in Alaska. Davis' (1995) review of another AMEDD facility found that services provided by civilian certified nurse midwives employed by the AMEDD also result in significant cost avoidance, while providing care similar to that provided by more costly obstetricians and gynecologists.

In an unpublished research study by Davis (1992) of nurse managed clinics by APNs, nurse managed clinics received better ratings from clients than did traditional physician managed clinics in terms of intent to return to the clinic (with subsequent impact on continuity of care), perceptions of convenience, and perceptions of adequacy of time spent on teaching. Perceptions

of convenience and adequacy of time spent teaching were predictive of client satisfaction. Davis' findings support increased utilization of nurse managed clinics and APNs in the AMEDD. Mays, Marks, and Byers, in their "Primary Care Demonstration Project," surveyed 58 primary care physicians, nurse practitioners, and physicians assistants in nine clinics of three Army posts and found more similarities than difference among providers on interpersonal practice styles. Only preliminary findings are complete and Mays, Marks, and Byers plan to provide further results of patients' perceptions of the three groups of providers (personal communication with Mays 1996).

Although no formal report has been completed, Brooke Army Medical Center in San Antonio, Texas, has recently opened a nurse managed clinic, the "Adult Primary Care Network Clinic." According to Fleshin, 1000 TRICARE beneficiaries have been enrolled in the APN clinic since its opening in July 1996. The clinic is also a designated Medicare simulation pilot site. A "sister center," the "Health Promotion Center opened in October 1996, and utilizes clinical nurse specialists as instructors and leaders (personal communication R. Fleshin 1996).

Factors Influencing APN Job Satisfaction and Intent to Remain in the Job

No published studies of APN-specific job satisfaction and intention to remain in the role were found. However, numerous research studies examine job satisfaction and intention to remain in nursing and turnover among staff nurses (Roedel and Nystrom 1988, Parasuraman 1989, Kramer and Hafner 1989, Alpander 1990, Kramer and Schmalenberg 1991, Blegen 1993, Irvine and Evans 1995, and Misener, Haddock, Gleaton, and Ajamieh 1996). Misner et al.. stated, "Job satisfaction is a multifaceted construct with a variety of definitions and related concepts" (1996, 87). Their review of the literature led to the conclusion that job attitudes among nurses

are key elements in maintenance of an effective organization.

In a study of nursing jobs and satisfaction, Roedel and Nystrom (1988) surveyed 135 nurses, including those with master's degrees, employed in a hospital. However, no identification was made of APNs specifically. Their research found statistically significant relationships between autonomy, feedback from the job, and task identity.

Alpander (1990) examined the relationship between commitment to hospital goals and job satisfaction. Although his study was not specific to APNs, he found a person's commitment to an organization has a significant role in how he or she feels about the job. Alpander's research was based on Herzberg's two-factor (intrinsic/extrinsic factors) theory, postulating that the content of the work, rather than the setting of the work, is the motivating factor.

In a 1991 survey of over 1800 U.S. nurses, five categories of variables were examined for their relationship to job satisfaction: organizational structure, professional practice, management style, quality of leadership, and professional development. Results of this study found a positive correlation between nurses' job satisfaction and the perceived hospital image and valuation of nursing. This study did not specifically identify nurses who may have also been APNs (Kramer and Schmalenberg 1991).

Demographic variables, such as age, years of nursing experience, marital status, etc., have been examined for their impact on job satisfaction in nursing in general. Parasuraman (1989), in a study of 307 hospital-employed nurses, concluded that job satisfaction was negatively associated with intention to leave and intention to leave was positively related to turnover. She found that turnover is "the product of complex linkages among personal/demographic and organizational/job

experience variables, as well as attitudinal variables" (Parasuraman 1989, 272). Blegen's (1993) meta-analysis of variables related to nurses' job satisfaction found low correlations (less than .20) with age, education, tenure, and professionalization. In this same meta-analysis, job satisfaction was most strongly associated with stress and organizational commitment and was moderately associated (correlations of .2 - .5) with communication with supervisor, autonomy, recognition, routinization, communication with peers, fairness, and locus of control. In another meta-analysis, Irvine and Evans (1995) found that variables related to work content and work environment had a stronger relationship with job satisfaction than did economic or individual difference variables. Their findings support the hypothesis that job satisfaction is strongly and negatively related to behavioral intention to remain in the job. However, no mention of APNs was made in either meta-analysis. In a doctoral dissertation by Yoder (1992) numerous research studies were found to identify general areas affecting job satisfaction in nursing to include: quality of care; autonomy of practice; attitudes and support of supervisors, administrators, and physicians; lack of advancement in clinical roles; non-nursing tasks required; and inadequate pay and recognition. Yoder examined the literature for relationship of job satisfaction to intent to stay/turnover and productivity, to include Price's causal model of turnover. This causal model states, "intent to stay results from job satisfaction and is thought to mediate or be predictive of turnover" (Yoder 1992, 51).

APN Satisfaction in the AMEDD. Although the Army Nurse Corps "Proud to Care Study" surveyed all Army nurses and included questions of satisfaction and intent to remain in the AMEDD, no published studies were found that examined APN job satisfaction and intention to

remain in the AMEDD. In the "Proud to Care Study" reviewed by Yoder (1992), primary factors contributing to dissatisfaction were pay and insufficient personal time. Career development relationships (such as mentoring) were often identified by respondents as lacking. Poor management and leadership were cited as reasons for leaving the Army Nurse Corps. Respondents in the "Proud to Care Study" were most satisfied by autonomy of practice and degree of professionalism.

Current research efforts in the AMEDD may assist in the understanding of job satisfaction of APNs. The "Primary Care Demonstration Project" revealed that all 58 providers surveyed (to include 19 APNs) in nine clinics at three sites were "generally satisfied with their jobs and their ability to provide quality health care" (Mays et al. 1996, I). Final reports from this project are pending (Mays, Marks, and Byers 1996).

If one accepts research findings that satisfaction is related to intent to remain in a position or organization and to turnover, job satisfaction must be examined from an economic view point as well as from personnel and patient care delivery view points. Turnover costs of nurses leaving the Army result in \$35,000 replacement/turnover costs per nurse for the Army (Yoder 1992).

Studies outside of nursing but within the AMEDD describe military physicians' and psychologists' professional satisfaction and intent to remain in the military. Retention was related to professional satisfaction, longer length of service, higher rank, recruitment by voluntary programs, a specialty in pediatrics, fewer work hours, and less on-call time. Professional satisfaction was especially important to physicians with less than eight years of service (Kravitz, Thomas, Sloss, and Hosek 1993). Intention to remain in the Army was a good predictor of

retention, especially so when related to military identity, increased years of service, professional opportunities, and retirement benefits in a six year followup causal study of Army psychologists (Mangelsdorff 1984). Steinweg (1994) in a retrospective study of military, graduate medical education residents, found two-thirds of career family practice practitioners' reasons for remaining on active duty were related to time-in-service obligations from attendance at the Uniformed Services University of the Health Sciences or the U.S. Military Academy, prior service, and fellowship training.

Purpose (Variables/Working Hypothesis)

In order to best utilize and maintain adequate numbers of APNs to provide care, variables which impact APNs' scopes of practice, job satisfaction, and intent to remain or leave the AMEDD prior to attaining retirement eligibility were examined. An objective of this study was to describe the scopes of practice and major tasks of APNs in the AMEDD. A second objective of this study was to identify professional factors that influence an APN's job satisfaction and intention to remain in the AMEDD until the APN is retirement eligible.

Null hypotheses: (1) There is no relationship between quality of professional life factors (quality of care, clinical time, support staff, personal time, and rewards) and intent to remain in the AMEDD until retirement eligible. (2) There is no relationship between quality of professional life factors (quality of care, clinical time, support staff, personal time, and rewards) and overall satisfaction. (3) There is no relationship between APNs' perceptions of autonomy, collaborative opportunities, and overall satisfaction. (4) There is no relationship between APNs' perceptions of

autonomy, opportunities for collaboration, and overall satisfaction, and intent to remain in the AMEDD.

Quality of professional life is defined as APNs' perceptions of seven elements (independent predictor variables): quality of care, clinical time, support staff, rewards, personal time, autonomy, and collaboration. Intent to stay (dependent variable) is defined as intent to remain in the AMEDD until retirement eligible.

Alternate Hypotheses: (1) The intent to remain in the AMEDD until retirement eligible is a function of quality of professional life factors (quality of care, clinical time, support staff, rewards, personal time). (2) Overall satisfaction is a function of quality of professional life factors (quality of care, clinical time, support staff, personal time, and rewards). (3) Overall satisfaction is a function of APNs' perceptions of autonomy and collaborative opportunities. (4) The intent to remain in the AMEDD until retirement eligible is a function of APNs' perceptions of autonomy, opportunities for collaboration, and overall satisfaction.

Variables to examine:

Demographics: Variables examined included the following: years in nursing, years as an APN, number of assignments (geographic locations) as an APN, graduate of ROTC or other Army scholarship program for BSN, number years active duty, number years active duty prior to graduate program, gender, marital status, number of family members under age 18, ethnicity, age, APN specialty, source of funding for master's level education for APN and approximate cost of tuition, number of years of obligated service following funding for graduate school (if funded), number of years remaining on service obligation, number of years of prior enlisted service,

number of years of prior non-ANC commissioned service, rank, title/professional discipline of immediate clinical supervision, title/professional discipline of rater if different from immediate clinical supervisor, title/professional discipline of senior rater, and career status (VI, RA, civilian). (See Appendix A, Parts I and VI, Items 76-102.)

Satisfaction with Role: A 5-point Likert scale survey instrument was used to measure satisfaction with the APN role. (See Glossary for definition.) Subsets of job satisfaction included quality of care, clinical time, support staff, rewards, and personal time. (See Appendix A, Part II, Items 3-24.)

Intent to Remain in the AMEDD: One question concerning intent to remain in the AMEDD was included. APNs were asked to respond to intent to remain in the AMEDD using a five point Likert Scale, with possible responses ranging from “strongly disagree” to “strongly agree.” (See Appendix A, Part III, Item 25.)

Autonomy: A 5-point Likert scale survey instrument was used to determine APNs’ perceptions of professional autonomy in the APN role with possible responses ranging from “never” to “always.” (See Glossary for definition and Appendix A, Part IV, Items 26-55.)

Collaboration: A 5-point Likert scale survey instrument was used to determine APNs’ perceptions of collaboration with other healthcare providers, with possible responses ranging from “never” to “always.” (See Glossary for definition and Appendix A, Part V, Items 56-75.)

Perception of the APN Role and Job Scope, Tasks, and Responsibilities: Given the wide range of job descriptions and tasks currently performed by APNs, it was anticipated that no one survey can adequately capture all the roles and entire job scope of individual APNs. Although the

Medical Expense and Performance Reporting System (MEPRS) workload data analysis (refer to Appendix B for Workload Instrument/Monthly Worksheet) can provide a relatively objective description of the role and scope of practice of the APN, participants were asked to complete a multiple choice, true/false, and short response questionnaire. Questions included: Is workload being accurately captured? What workload measurement system is used? Does the APN perceive she/he is being adequately utilized as an APN? Does the APN perceive that promotion opportunities exist if she/he remains in an APN role? Job scope variables included: prescriptive authority, admitting authority, inpatients, outpatients, authority to order diagnostic tests, on-call duties, opportunity for continuing education, opportunity to participate in research, and administrative/non-clinical tasks. (Refer to Appendix A, Part VII, Items 103 through 153.) The text by Burns and Grove (1993) was used as a guide in the development of this questionnaire/instrument. Frequencies were calculated. Information from Part VII of this survey instrument was not analyzed with inferential statistics. Part VII was included to increase this researcher's understanding of the activities of APNs and to gain information that may lead to the development of additional surveys. Using information gained from this survey, researchers can develop additional tools that examine APNs' job scopes, tasks, responsibilities, job satisfaction, and intent to remain in the AMEDD.

CHAPTER 2

METHODS AND PROCEDURES

Study Design

A descriptive study using data collected by a survey instrument was implemented. APNs in two U.S. Army Medical Command Regions, representing military treatment facilities in the continental U.S.(CONUS) and outside of the continental U.S.(OCONUS) were surveyed. All APNs in one MEDCEN (medical center and outlying clinics) and two MEDDACS (Army Community Hospitals and clinics) in the two regions were invited to participate. Therefore, a convenience sample was used. However, throughout their careers, military APNs are rotated through AMEDD facilities so there is some inherent randomness in the sampling. One hundred twenty-one surveys were distributed in the six locations and 87 were returned for a response rate of 72%. The return rate from OCONUS was 78.2% (55 distributed and 44 returned) and 65.2% from CONUS (66 distributed and 43 returned). Of the 87 respondents, 61 were active duty Army APNs (with the remainder being DA civilian APNs and active duty U.S. Air Force APNs). According to statistics provided by Army Nurse Corps Branch (Kelty, January 1997), there were 782 APNs on active duty. Therefore, this study's sample represents approximately 8% of the total APN population.

In order to assure anonymity of responding APNs, given the small number of APNs in some of the facilities, reporting of respondents' survey information reflected only whether they were located at a MEDCEN or at a MEDDAC, in the continental U.S. or outside of the continental U.S. Locations were reported by a letter designation.

Data Collection

Points of contact were established for their assistance in delivering survey packets to APNs at six different AMEDD medical treatment facilities. Yoder (1992) found that the return rate of surveys improved when a specific person (point of contact) gave surveys to the sample participants and collected completed surveys from participants. Survey packets with information and instructions were mailed to the points of contact who distributed one per APN (using a convenience sample of available APNs) at that specific location. Although permission for this study was granted by the Army Nurse Corps, a letter was sent to the Deputy Commander of Nursing/Chief Nurse at each AMEDD facility where APNs were surveyed, providing each with a brief overview of this graduate management project. (Refer to Appendix A for survey instrument, Appendix C for Letter to APN participants, Appendix D for Letter to points of contact, and Appendix E for Letter to Deputy Commanders for Nursing/Chief Nurses.) Each APN participant was asked to return the survey in a sealed envelope to the point of contact. Since individual nurses were not identified, individual followup by the researcher was not possible, except to contact the points of contact and encourage them to collect and return the survey packets from APNs. Because mailed questionnaires are frequently disregarded by potential participants

resulting in a poor return rate (Burns and Grove 1993), the point of contact at each location was asked to followup with APNs and to encourage them to return the surveys in order to increase response rate.

Reliability and Validity

Previously validated survey instruments were used. Three of the surveys from the recently completed, AMEDD "Primary Care Demonstration Project" were used with minor adaptations described in the following paragraphs.

APN Satisfaction. The instrument, "Provider Satisfaction," from the AMEDD Primary Care Demonstration Project (Mays, et al. 1996) was used. The instrument was adapted by the researchers in that study from one used in the CHAMPUS Reform Initiative, DoD Demonstration Project. Findings from that project reported good internal consistency with inter-item correlations within dimensions yielding an above average Cronbach alpha coefficients of 0.65 to 0.89. Construct validity was demonstrated by a significant correlation between degree of satisfaction and intent to remain in the military (Mays, et al. 1996). Researchers using the survey in the Primary Care Demonstration Project found an excellent internal consistency with an alpha of 0.93. Categories established by the Primary Care Demonstration Project researchers were used for this study of APNs. These categories included: Overall satisfaction = Items 3 through 6, 20, and 21; Quality of Care = Items 7 through 9 and 22 through 24; Clinical Time = 10 through 12; Support Staff = 13 through 15; Rewards = 16 and 17; Personal Time = 18 and 19. Item number 11 was modified to read, "number of patients" rather than "number of outpatients" due to some APNs having only an inpatient practice. An additional item was added, "intent to remain in the

Army Medical Department until retirement eligible" with a Likert scale ranking of (1) indicating strongly disagree, (2) indicating disagree, (3) indicating uncertain, (4) indicating agree, and (5) indicating strongly agree. Refer to Appendix A Parts II and III (Items 3 through 25) for a copy of the instrument.

APN Autonomy. The "Provider Autonomy" instrument from the Primary Care Demonstration Project (Mays et al. 1996) was used. The instrument was adapted, by the Primary Care Demonstration Project researchers, from Dempster's instrument on autonomy (1991). As was the case in the Primary Care Demonstration Project, only the total score from this 30 item instrument was analyzed and items 33, 38, 51, and 53 were scored in reverse before summing. In the original study, content validity was assessed by an expert panel of 28 subjects. The initial survey was distributed to 1,000 registered nurses (including APNs) throughout the United States with a 57% return rate. A reliability assessment of the internal consistency of the 30 item instrument yielded a Cronbach's alpha of 0.95 with a fair overall inter-item correlation of 0.39. The corrected item total correlation range was .45 to .73. Dempster (1990) found the instrument to demonstrate good convergent and discriminant validity relative to other measures of autonomy and related traits. In the Primary Care Demonstration Project study, the questionnaire showed good internal consistency with an alpha of 0.86. Although lower than Dempster's findings, that result was attributed by the researchers to differences in the two studies' samples (Mays et al. 1996). Dempster surveyed a more heterogeneous group (registered nurses and APNs) while the participants in the Primary Care Demonstration Project were physicians, nurse practitioners, and physician assistants. A copy of the instrument is found in Appendix A, Part IV, Items 26-55.

APN Collaboration. The “Provider Collaboration” instrument from the Primary Care Demonstration Project (Mays et al. 1996) was used. This instrument was an adaptation of an instrument developed by Stichler who tested the questionnaire on nurses working in acute care settings (1990; 1992). The survey was also used by King and Lee (1994) in a military study of nurses and physicians working in critical care. Internal consistency assessments of the original instrument resulted in a Cronbach’s alpha of 0.96 (Stichler 1990; 1992) and 0.97 (King and Lee 1994). Stichler (1990; 1992) found content validity assessment yielded an index score of 0.91. King and Lee (1994) found the instrument demonstrated good convergent and discriminant validity when compared with a conflict resolution instrument. Stichler (1990) found the instrument demonstrated good convergent and discriminant validity when compared with a work satisfaction instrument and a work stress instrument. In the Primary Care Demonstration Project, the researchers found excellent internal consistency with an alpha of 0.96. A copy of the instrument is found in Appendix A, Part V, Items 56 through 75. Only the total score on the 20-item instrument was analyzed.

Ethical Issues

All APN participants received a memo with information regarding the study. No patients were surveyed and no patient records were used. The study was conducted according to the guidelines set forth in AR 40-38 “Medical Services Clinical Investigation Program.” There was no known medical risk from or related to the data collection procedures. The benefit to the APN participants was the awareness that they participated in a study that may improve understanding

of the use of APNs in the AMEDD, their job satisfaction, and their intent to remain in the AMEDD. Reports did not identify specific medical treatment facilities or specific APNs, in order to protect confidentiality of the APNs responding.

Pilot Study

A pilot study of 13 master's prepared nurses with current or previous assignment(s) in an APN role in the AMEDD was conducted prior to administration of the final survey instrument. None of these pilot study participants were included in the actual study. Each participant in the pilot study received the survey instrument (Appendix A) and Letter to APN (Appendix C) through personal contact with the researcher. Completed surveys were returned in sealed envelopes to the researcher. One week after they received the survey packets, the pilot project participants were contacted by the researcher and encouraged to complete and return the surveys.

All pilot project nurses returned completed surveys (n=13). Data from this pilot project were examined, resulting in only minor modifications to the survey packet. Although several pilot project participants commented that the survey was lengthy and required 15-20 minutes to complete, it was determined that all items were necessary to gather the information sought by this researcher; no major changes would be made. In addition, it was the intent of the researcher, in examining job satisfaction, autonomy, and collaborative relationships (Sections II, IV, and V of the survey), to use survey instruments that have been used in other researchers' studies. Although reliability and validity of Parts II, IV, and V of the survey instrument have been computed by previous researchers, Parts III, VI, and VII were newly developed items. Some items in Parts VI

and VII were adjusted based on comments made by the pilot study participants suggesting greater clarification of selected items.

Data Analysis: Descriptive and Inferential Statistics

Descriptive statistics and measures of central tendency were used to examine demographic data and job scope, tasks, and responsibilities data. Independent predictor variables were analyzed to determine their effect on APNs' intent to remain in the AMEDD. Frequencies, descriptive statistics, correlations, and linear regression were used to analyze the differences in relationships between the dependent variable (intent to remain in the AMEDD) and independent predictor variables. SPSS 7.5 (1996) for Windows was the statistical program used. A significance level of $\alpha \leq .05$ was considered statistically significant. The dependent variable (intent to remain in the AMEDD) and independent predictor variables were coded as continuous variables, as described in the previous section.

A 2-tailed correlation matrix with Pearson product-moment correlation coefficient (Pearson r) was used to determine if the independent variables were significantly related to intent to remain in the AMEDD. The relationship of each of the independent variables to the intent to remain in the AMEDD was analyzed using regression statistics, i.e., regress overall satisfaction, autonomy, and collaborative relationships on intent to remain in the AMEDD.

Expected Findings and Utility of Results

Findings of this study may assist the Army Nurse Corps and the U.S. Army Medical

Department (AMEDD) to better understand the current use of APNs in the AMEDD. After evaluating the utilization of APNs in the AMEDD, the Army Nurse Corps may choose to reexamine the utilization of APNs to more fully employ their skills of providing cost effective, accessible, and high quality care in today's managed care environment. Awareness of the variables influencing APNs' intent to remain on active duty until retirement eligible may assist the Army Nurse Corps to enhance assignment opportunities that would increase retention and satisfaction.

As stated by Burns and Grove (1993), although research offers support for a position, limitations of the study in forming conclusions about the findings must be reported. Although it is anticipated that professional issues related to job satisfaction are related to intent to remain in the AMEDD, generalization of this anticipated finding to other sample groups may not be appropriate due to differences in geographic locations, command and organizational structure, and demographic differences of APNs. However, given the paucity of research specific to APNs in the MHSS, findings from this study could generate further studies to add to our information base on APN utilization, job satisfaction, and intent to remain in the AMEDD. It is anticipated that findings from this study may result in additional questions for possible future research.

CHAPTER 3

THE RESULTS

The results of the study are presented in the following order: descriptive statistics (to include frequencies and measures of central tendency) for socio-demographic characteristics of the sample; descriptive statistics on job scope, tasks, and major responsibilities; descriptive statistics (to include correlations) for respondents' answers to Parts II, III, IV, and V of the survey (job satisfaction, intent to remain in the AMEDD, autonomy, and collaboration), and linear regression. This chapter concludes with a discussion of power analysis and reliability of Parts II, IV, and V of the survey instrument (job satisfaction subscales, autonomy scale, and collaboration scale).

Descriptive Statistics

Sample Demographics

As shown in Table 1, all categories of APNs (nurse practitioners, certified registered nurse anesthetists, certified nurse midwives, clinical nurse specialists, and community health nurses were represented in the sample. Three respondents gave "Other" as a response to their category, however, only one of these three was currently in an APN role. Respondents were APNs from MEDCENS and MEDDACS and overseas and U.S. locations (see Appendix G - Table 1a).

Categories of only active duty Army respondents (n = 61) are reflected on Table 2. In addition to the 61 Army respondents, there were 17 civilian APN respondents and 7 Air Force respondents.

Table 1.-- All respondents by APN category of nurse practitioner (NP), certified registered nurse anesthetist (CRNA), certified nurse midwife (CNM), clinical nurse specialist (CNS), and community health nurse (CHN)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00 NP	30	35.3	35.3	35.3
	2.00	23	27.1	27.1	62.4
	CRNA				
	3.00 CNM	1	1.2	1.2	63.5
	4.00 CNS	6	7.1	7.1	70.6
	5.00 CHN	24	28.2	28.2	98.8
	6.00	1	1.2	1.2	100.0
	OTHER				
	Total	85	100.0	100.0	
	Total	85	100.0		

Table 2. -- Army respondents only, by APN category

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00 NP	21	34.4	34.4	34.4
	2.00	19	31.1	31.1	65.6
	CRNA				
	3.00 CNM	1	1.6	1.6	67.2
	4.00 CNS	3	4.9	4.9	72.1
	5.00 CHN	17	27.9	27.9	100.0
	Total	61	100.0	100.0	
	Total	61	100.0		

The mean age of respondents was 41.7. Sixty eight percent of respondents were female (n= 58). Ethnic backgrounds reflected 77.6% Caucasian American, 11.8% African American, 3% Hispanic American, and 3.6% in other ethnic categories. Three did not respond to the question of ethnicity. Rank/Grade of military respondents (range of captain to colonel) is reflected in Table 3 with over 50% of the respondents being Captains and Majors. Seventy percent of the respondents are married. Forty four percent have no dependents under the age of 18 at home, with the majority having one or more dependents under the age of 18 in the home.

Table 3. -- Rank or civilian status of all respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00				
	CIVILIAN	15	17.6	18.8	18.8
	3.00 CPT	20	23.5	25.0	43.8
	4.00 MAJOR	30	35.3	37.5	81.3
	5.00 LTC	13	15.3	16.3	97.5
	6.00 COL	2	2.4	2.5	100.0
	Total	80	94.1	100.0	
Missing	8.00	2	2.4		
	9.00 NO RESPONSE	3	3.5		
	Total	5	5.9		
	Total	85	100.0		

Educational Backgrounds

The majority of respondents have a master's degree in nursing (64.7%) as illustrated in Appendix G-Table 2a. Fifty four percent of the respondents were funded for their APN educational programs through the AMEDD. Tuition costs for APN programs ranged from \$300 to over \$100K with five APNs giving a "not applicable" response to tuition cost and another 32 giving no response. Many of the 32 wrote comments such as, "I do not remember" or "I have no idea."

Experience in the APN Role

Seventy five percent of respondents currently in APN roles stated they have had one to six years in an APN role. The majority (79%) of the APNs had no experience in civilian APN positions. Fifty-eight percent of respondents have been in their current APN position for 1-2 years. Sixty-four percent of the APNs have had 1-2 APN positions (including their current position) with less than 25% having four or more APN positions.

Certification

Respondents were asked to reply to questions regarding certification. Of the 30 nurse practitioners, 17 were credentialed as nurse practitioners through the American Nurses Credentialing Center. Of the six clinical nurse specialists, five were credentialed through the American Nurses Credentialing Center as clinical nurse specialists. All nurse anesthetists were certified registered nurse anesthetists.

Promotion Opportunities with APN Assignments

Respondents were asked to answer the question, "Do you believe an assignment in the APN role is helpful for promotion?" A "no" response was coded with a 0 and a "yes" response was coded with a 1. Seventy-four of the 85 respondents currently in APN roles responded to the question with 50% answering affirmatively and 50% answering with a negative, as illustrated on Table 4. As illustrated on Table 5, of the 61 Army respondents, 41% stated they did not perceive an APN role was helpful for promotion and 47.5% stated they viewed the role as helpful. A small number (11.5%) of the Army respondents did not reply to the question.

Table 4. -- Is the APN role helpful for promotion? (All respondents)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00 no	37	43.5	50.0	50.0
	1.00 yes	37	43.5	50.0	100.0
	Total	74	87.1	100.0	
Missing	8.00 not applicable	4	4.7		
	9.00 no response	7	8.2		
	Total	11	12.9		
	Total	85	100.0		

Table 5. -- Is the APN role helpful for promotion? (Army APNs only)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00 no	25	41.0	46.3	46.3
	1.00 yes	29	47.5	53.7	100.0
	Total	54	88.5	100.0	
Missing	9.00 no response	7	11.5		
	Total	7	11.5		
	Total	61	100.0		

Major Tasks and Responsibilities

In Part VII of the survey instrument, respondents were asked to identify major tasks and responsibilities of their current APN roles. Respondents were asked to answer "yes" or "no" to 25 tasks. Frequencies are illustrated on Tables 1 through 75 of Appendix H. Frequencies are reported by category of APN: certified registered nurse anesthetist (Tables 1-25), community health nurse (Tables 26-50), and a combined category of nurse practitioner, clinical nurse specialist, and certified nurse midwife (Tables 51-75). Clinical nurse specialists (n=6) and certified nurse midwife (n=1) responses were combined with those of nurse practitioners due to small sample sizes of each category and more similarities in job tasks with nurse practitioners than with certified registered nurse anesthetists or community health nurses.

Capture of Workload by APNs

Respondents were asked how they captured workload in their facilities and if they perceived the current method of workload measurement is adequate. Ninety percent responded that they used MEPRS. Several respondents stated that in addition to MEPRS, other workload measurements were used: computerized clinic or department log book (n = 10), pencil and paper log book (n = 9), the Ambulatory Data System/ADS (n = 13), CHCS (n = 32), and encounter forms (n = 6). The majority of respondents (60%) did not perceive workload as being accurately captured by their current measurement systems.

Utilization:

Respondents were asked if they were fully utilized as APNs in their current positions. The majority (n=55) responded "yes" but 28 responded that they were not being fully utilized as APNs. The majority of APNs did not perceive barriers to full utilization as "too many non-APN tasks," "lack of specific credentials," or "lack of prescriptive authority."

Research Activities

Respondents were asked if they were currently engaged in any research activities. Seventy-two percent (n = 61) responded that they were not engaged in research. Research activities of library research, assisting staff with research projects, internet searches, recently completed research projects, critiques of research articles, active involvement in a research project, and writing an article for publication were given on the survey instrument. Frequencies of involvement in each of the activities are reflected in Appendix G - Tables 3a through 3h. It was noted that none of the research activities were engaged in by 25% or more of the respondents. Respondents were also asked to identify barriers to engaging in research activities. Barriers listed on the survey instrument included patient case load, administrative duties, lack of time, funding, no research forum at the facility, and no formal emphasis on research in the facility. Frequencies of responses are reflected in Appendix G - Tables 4a through 4g. It is noted that lack of time was the only variable identified by at least 50% (n = 44) as a significant barrier to research.

Committee Involvement

Respondents were asked if they were members of any of 12 commonly organized committees in the medical facilities. Of the 12 committees, the largest representation of APNs

was on Quality Improvement Committees (n = 23), followed by Nursing Executive Committees (n = 12), Research Committees (n = 7), Utilization Management Committees (n = 6), Infection Control Committees (n = 6). Risk Management, Safety, Special Care, Credentials, Library, Pharmacy and Therapeutics, and Medical Records Committees had representation by APNs of four or less, with no respondent indicating membership on a Medical Records Committee. It was also noted that several respondents were members of multiple committees while many respondents were on no committee.

Peer Review and Support Structure

Sixty-two (73%) of the respondents indicated that they were involved in a peer review system. Forty-seven (55%) indicated there was a regularly held meeting for APNs in their facility. Sixty (71%) stated there was no support group for APNs in their facility and 70 (82%) stated there were no support groups for APNs available to them outside of their facility.

Rating Schemes

Thirty-six of the respondents identified a physician as their immediate clinical supervisor. Thirty-three stated that their clinical supervisor was different than their rater. Senior raters were physicians (n = 35, 43.7%), another APN (n = 14, 17.5%), and registered nurses who were not APNs (n = 31, 38.7%).

Ideal Assignment

Respondents were asked to identify characteristics of what they considered would be an ideal assignment. Choices given were: geographic location, administrative support, collegial relationships, available resources, support of enlisted personnel, supportive supervisor, and type

of patient population. Characteristics of ideal assignments identified by at least 50% of the respondents included: administrative support, collegial relationships, available resources, supportive supervisor, and patient population. The most frequent characteristics cited were collegial relationships (n = 67) followed by supportive supervisor (n = 63) and available resources (n = 62). The least frequent characteristics cited were support of enlisted personnel (n = 35) and geographic location (n = 43). The majority of APNs gave multiple characteristics as important for an “ideal” assignment.

Intent to Remain in the AMEDD

Intent to remain in the AMEDD until retirement eligible was measured by one item and used a 5-point Likert scale with a response of 1 = “strongly disagree” and a response of 5 = “strongly agree.” Responses of the 85 APN respondents currently in APN roles are reflected in Table 6. Responses of the 61 Army APNs are reflected on Table 7.

Table 6. -- Intention to remain in the AMEDD (All respondents)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00 strongly disagree	7	8.2	9.1	9.1
	3.00 uncertain	19	22.4	24.7	33.8
	4.00 agree	20	23.5	26.0	59.7
	5.00 strongly agree	31	36.5	40.3	100.0
	Total	77	90.6	100.0	
	8.00 not applicable	7	8.2		
Missing	9.00 no response	1	1.2		
	Total	8	9.4		
	Total	85	100.0		

Table 7. -- Intention to remain in the AMEDD (Army APNs only)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00 strongly disagree	4	6.6	6.8	6.8
	3.00 uncertain	13	21.3	22.0	28.8
	4.00 agree	16	26.2	27.1	55.9
	5.00 strongly agree	26	42.6	44.1	100.0
	Total	59	96.7	100.0	
	8.00 not applicable	2	3.3		
Missing	Total	2	3.3		
	Total	61	100.0		

Analysis of Satisfaction and Satisfaction Subscales

Respondents were asked to rate each item on Part II of the survey instrument (Items 3-24) on a scale from 0-5 where "0" indicated "never satisfied" and "5" indicated "always satisfied." Frequencies and measures of central tendency for the six subscales of job satisfaction are reflected in Tables 5a-g in Appendix G for all respondents currently in APN roles and in Tables 6a-g of Appendix G for Army respondents currently in APN roles. Only the five subscales of professional life variables (rewards, quality care, personal time, clinical time, and support staff) and the subscale of overall satisfaction were used. Scores on the low end of the range indicated "never" or "sometimes satisfied" and scores on the high end of the range indicated "always" or "most of the time satisfied." Following the study by Mays et al., a total value for the six subscales was not computed in this project. The ranges for the subscales are as follows: rewards 2-10 with a mean of 6.6235 obtained for all APNs (mean of 6.9016 for Army APNs); overall satisfaction 6-30 with a mean of 21.8353 obtained for all APNs (mean of 22.4426 for Army APNs); quality of care 6-30 with a mean of 20.5412 obtained for all APNs (mean of 20.8525 for Army APNs); clinical time 3-15 with a mean of 10.5176 obtained for all APNs (mean of 10.4098 for Army APNs); support staff 3-15 with a mean of 9.9882 obtained for all APNs (mean of 10.3443 for Army APNs); and personal time 2-10 with a mean of 4.8235 obtained for all APNs (mean of 4.9344 for Army APNs).

Tables 1-3 of Appendix J reflect results by APN categories of certified registered nurse anesthetist, community health nurse, and a combined category of nurse practitioner, clinical nurse

specialist, and certified nurse midwife. Certified registered nurse anesthetists were more satisfied with quality of care provided (mean = 21.9), clinical time (mean = 11.5), support staff (mean = 10.6), and personal time available (mean = 5.6) than the other two categories. Of the three groups, community health nurses were most satisfied with rewards (mean = 7.3) and scored the least satisfaction on personal time available (mean = 4.4). The combined category of clinical nurse specialist, nurse practitioner, and certified nurse midwife scored the lowest of the groups on satisfaction with quality of care (mean = 19.9), clinical time (mean = 9.7), and support staff (mean = 9.4). The combined category of nurse practitioner, clinical nurse specialist, and nurse midwife also scored lowest on overall satisfaction (mean = 20.6) with certified registered nurse anesthetists scoring highest on overall satisfaction (mean = 23.2)

Analysis of Autonomy Scale

Respondents were asked to rate each item on Part IV of the survey instrument (Items 26 through 55 on a scale from 0-5 where "0" indicated "never" and "5" indicated "always.") Frequencies and measures of central tendency for the total autonomy scale are reflected on Tables 7a-b of Appendix G for all respondents currently in APN roles and on Tables 8a-b of Appendix G for all Army respondents currently in an APN role. No subscales were used on this instrument. The range for total points on the autonomy scale was 30-150 with a mean of 121.0353 obtained for all APNs and a mean of 122.7049 for Army APNs. Lower scores indicate lower perceptions of autonomy and higher scores indicate a stronger sense of autonomy.

Tables 1-3 of Appendix J reflect scores on total autonomy by category of APN. Certified registered nurse anesthetists scored highest (mean = 122.7) followed by the combined category of

nurse practitioner, clinical nurse specialist, and nurse midwife (mean = 121.7) and community health nurse (mean = 118.8).

Analysis of Collaboration Scale

Respondents were asked to rate each item on Part V (Items 56 through 75) on a scale from 0-5 with "0" indicating "never" and "5" indicating "always." Frequencies and measures of central tendency for the total collaboration scale are reflected on Tables 7a and 7c of Appendix G for all respondents currently in APN roles and on Tables 8a and 8c of Appendix G for all Army respondents currently in an APN role. No subscales were used on this instrument. The range for total points on the collaboration scale was 20-100 with a mean of 77.0471 obtained for all APNs and a mean of 79.4906 for Army APNs. Lower scores indicate APNs' perceptions that there are few valuable collaborative relationships with higher scores indicating a perception of positive collaborative relationships.

Tables 1-3 of Appendix J reflect scores on perceptions of collaboration by APN category. Certified registered nurse anesthetists scored highest (perceived positive collaborative relationships exist in their roles, mean = 80.2) followed closely by the combined category of nurse practitioner, clinical nurse specialist, and nurse midwife (mean = 79.1). Community health nurses scored lowest on the collaboration scale (mean = 69.9)

Correlations

Analysis of the Relationship Between Quality of Professional Life Factors (quality of care, clinical time, support staff, personal time, and rewards) and Intent to Remain in the AMEDD Until Retirement Eligible

Pearson correlation coefficients were computed to determine if a relationship existed between intent to remain in the AMEDD and professional life factors. As shown in Table 8, a significant relationship was found between reward and intent to remain, between clinical time and intent to remain, and between support staff and intent to remain at the .05 level. (It was also noted that the relationship between reward and intent to remain was significant at the .01 level.)

Table 8. -- Correlation of the relationship between quality of professional life factors and intent to remain in the AMEDD until eligible for retirement

		STAY intention to stay in MHSS	QOFCARE	TIMECLIN	SUPSTAFF	REWARD	TIMEPERS
Pearson Correlation	STAY intention to stay in MHSS	1.000	.199	.264*	.269*	.420**	.142
	QOFCARE	.199	1.000	.505**	.454**	.315**	.442**
	TIMECLIN	.264*	.505**	1.000	.225*	.234*	.378**
	SUPSTAFF	.269*	.454**	.225*	1.000	.393**	.218*
	REWARD	.420**	.315**	.234*	.393**	1.000	.142
	TIMEPERS	.142	.442**	.378**	.218*	.142	1.000
Sig. (2-tailed)	STAY intention to stay in MHSS		.083	.020	.018	.000	.218
	QOFCARE	.083		.000	.000	.003	.000
	TIMECLIN	.020	.000		.039	.031	.000
	SUPSTAFF	.018	.000	.039		.000	.045
	REWARD	.000	.003	.031	.000		.195
	TIMEPERS	.218	.000	.000	.045	.195	
N	STAY intention to stay in MHSS	77	77	77	77	77	77
	QOFCARE	77	85	85	85	85	85
	TIMECLIN	77	85	85	85	85	85
	SUPSTAFF	77	85	85	85	85	85
	REWARD	77	85	85	85	85	85
	TIMEPERS	77	85	85	85	85	85

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Tables 4-6 of Appendix J reflect correlations by APN category. No significant correlation was found between the professional life factors and intent to remain in the AMEDD for certified registered nurse anesthetists. A significant relationship ($\alpha \leq .05$), was found between reward and

intent to remain in the AMEDD for community health nurses and the combined category of nurse practitioner, clinical nurse specialist, and nurse midwife.

Analysis of the Relationship Between Quality of Professional Life Factors (quality of care, clinical time, support staff, personal time, and rewards) and Overall Satisfaction

Pearson correlation coefficients were computed to determine if a relationship existed between overall satisfaction and professional life factors. As shown in Table 9, a significant relationship was found between all professional life factors (quality of care, clinical time, personal time, rewards, and support staff) and overall satisfaction at the .05 level.

Tables 7-9 of Appendix J reflect correlations by APN category. A significant relationship ($\alpha \leq .05$) was found between quality of care and overall satisfaction and support staff and overall satisfaction for certified registered nurse anesthetists. In the category of community health nurse, a significant relationship was found between quality of care and overall satisfaction, clinical time and overall satisfaction, and support staff and overall satisfaction at the .05 level. A significant relationship ($\alpha \leq .05$) between quality of care and overall satisfaction, support staff and overall satisfaction, and reward and overall satisfaction was found with the combined group of nurse practitioner, clinical nurse specialist, and certified nurse midwife.

Table 9. -- Correlation of the relationship between quality of professional life factors and overall satisfaction

	QOFCARE	TIMECLIN	SUPSTAFF	REWARD	TIMEPERS	OVERSAT
Pearson Correlation	QOFCARE .505**	TIMECLIN .505**	SUPSTAFF .454**	REWARD .315**	TIMEPERS .442**	OVERSAT .653**
		1.000	.225*	.234*	.378**	.322**
			1.000	.393**	.218*	.573**
				1.000	.142	.341**
					1.000	.285**
						1.000
Sig. (2-tailed)	QOFCARE .000	TIMECLIN .000	SUPSTAFF .039	REWARD .003	TIMEPERS .000	OVERSAT .000
				.031	.000	.000
				.000	.045	.000
					.195	.001
						.008
N	QOFCARE 85	TIMECLIN 85	SUPSTAFF 85	REWARD 85	TIMEPERS 85	OVERSAT 85
				85	85	85
					85	85
					85	85
					85	85
					85	85

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Analysis of the Relationship Between APNs' Perceptions of Autonomy, Collaboration, and Overall Satisfaction

Pearson correlation coefficients were computed to determine if a relationship existed between overall satisfaction, perceptions of autonomy, and collaboration. As shown in Table 10, a significant relationship was found between overall satisfaction and autonomy and between overall satisfaction and collaboration at the .05 level.

Tables 10-12 of Appendix J reflect correlations by APN category. A significant relationship was found between autonomy and overall satisfaction and all three categories of

APNs at the .05 level. A significant relationship at the .05 level between collaboration and overall satisfaction was found with community health nurses and the combined category of nurse practitioner, clinical nurse specialist, and certified nurse midwife.

Table 10. -- Correlation of the relationship between APNs' perceptions of autonomy, collaboration, and overall satisfaction

		TOTAUTON	PCOLAB	OVERSAT
Pearson Correlation	TOTAUTON	1.000	.277*	.467**
	PCOLAB	.277*	1.000	.383**
	OVERSAT	.467**	.383**	1.000
Sig. (2-tailed)	TOTAUTON		.010	.000
	PCOLAB	.010		.000
	OVERSAT	.000	.000	
N	TOTAUTON	85	85	85
	PCOLAB	85	85	85
	OVERSAT	85	85	85

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Analysis of the Relationship Between APNs' Perceptions of Autonomy, Opportunities for Collaboration, Overall Satisfaction, and Intent to Remain in the AMEDD

Pearson correlation coefficients were computed to determine if a relationship existed between autonomy, collaboration, overall satisfaction, and intent to remain in the AMEDD. As shown in Table 11, a significant relationship was found between overall satisfaction and intent to remain in the AMEDD at the .05 level.

Tables 13-15 of Appendix J reflect correlations by APN category. No significant relationship was found between the independent variables of autonomy, collaboration, and overall satisfaction and the dependent variable of intent to remain in the AMEDD for certified registered

nurse anesthetists or the combined category of nurse practitioner, clinical nurse specialist, and certified nurse midwife. A significant relationship at the .05 level was found between overall satisfaction and intent to remain in the AMEDD for community health nurses.

Table 11. – Correlation of the relationship between APNs' perceptions of autonomy, collaboration, overall satisfaction, and intent to remain in the AMEDD

		TOTAUTON	PCOLAB	OVERSAT	STAY intention to stay in MHSS
Pearson Correlation	TOTAUTON	1.000	.277*	.467**	.183
	PCOLAB	.277*	1.000	.383**	-.082
	OVERSAT	.467**	.383**	1.000	.309**
	STAY intention to stay in MHSS	.183	-.082	.309**	1.000
Sig. (2-tailed)	TOTAUTON		.010	.000	.111
	PCOLAB	.010		.000	.480
	OVERSAT	.000	.000		.006
	STAY intention to stay in MHSS	.111	.480	.006	
N	TOTAUTON	85	85	85	77
	PCOLAB	85	85	85	77
	OVERSAT	85	85	85	77
	STAY intention to stay in MHSS	77	77	77	77

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Hypothesis Testing

Null Hypothesis 1: There is no relationship between quality of professional life factors (rewards, quality of care, clinical time, support staff, and personal time) and intent to remain in the AMEDD.

Alternate Hypothesis 1: The intent to remain in the AMEDD until retirement eligible is a function of quality of professional life factors (rewards, quality of care, clinical time, support staff, and personal time).

The null hypothesis was rejected. Multi-variate model building was performed using SPSS Version 7.5 for Windows (1996) regression (step-wise), examining the variables of rewards, quality of care, clinical time, support staff, and personal time. The final model, ($F = 16.054, p = .000$) as illustrated on Tables 1a-c of Appendix I, contained one statistically significant variable, reward: 17.6% of the variance in intent to remain in the AMEDD was explained by this model. The model is based on $n=77$ since 8 APNs had no response for the dependent variable, intent to remain in the AMEDD. The model had an adjusted $R^2 = .165$ (R^2 adjusted for sample size and number of variables); that is, 16.5% of the variation in intent to stay was explained by the reward subscale. The model specifies that with increases in reward ($B = .231, p = .000$), there is an increase in intent to remain in the AMEDD. The reward subscale was defined by two items: salary/income and non-salary benefits.

A model with all variables entered resulted in minimal model degradation ($F = 4.097, p = .003$) as illustrated on Tables 2a-c of Appendix I, but the only variable in the model that remained significant was reward.

Hypothesis testing was also done by APN category as reflected in Tables 16a-c, 17a-c, and 18a-c of Appendix J. With the APN category of certified registered nurse anesthetists, the null hypothesis could not be rejected. The null hypothesis was rejected for the APN category of community health nurse. Reward was found to be a statistically significant variable, accounting for 38.6% of the variation in intent to remain in the AMEDD. For the combined category of nurse practitioner, clinical nurse specialist, and certified nurse midwife, the null hypothesis was also rejected. Reward was found to be a statistically significant variable, 29.3% of the variation in intent to remain in the AMEDD could be explained by reward.

Null Hypothesis 2: There is no relationship between quality of professional life factors (rewards, quality of care, clinical time, personal time, and support staff) and overall satisfaction.

Alternate Hypothesis 2: Overall satisfaction is a function of quality of professional life factors (rewards, quality of care, clinical time, personal time, and support staff).

The null hypothesis is rejected. Multi-variate model building was performed using SPSS version 7.5 for Windows (1996) regression (step-wise) using the variables rewards, quality of care, clinical time, support staff, and personal time. Two models were produced. The first model ($F = 61.854, p = .000$) as illustrated on Tables 3a-c of Appendix I, contained one statistically significant variable, quality of care: 42.7% of the variance in overall satisfaction was explained by this model. The model is based on $n = 85$. The model had an adjusted $R^2 = .42$ (R^2 adjusted for sample size and number of variables); that is, 42% of the variation in overall satisfaction was explained by the quality of care subscale. The model specifies that with increases in quality of care ($B = .792, p = .000$), there is an increase in overall satisfaction. The quality of care subscale

was defined by six items: quality of care the APN is able to provide, the ability to practice according to the APN's best judgement, the efficiency with which the APN perceives they are able to practice, the APN's perceptions of the abilities of other providers, the amount of time spent practicing outside the APN's specialty, and the APN's ability to arrange referrals to specialists.

A second model ($F = 45.029, p = .000$) was generated which contained two statistically significant variables, quality of care and support staff: an additional 9.6% of the variance in overall satisfaction was explained by this model. The model had an adjusted $R^2 = .512$ (R^2 adjusted for sample size and number of variables); that is, 51.2 percent of the variation in overall satisfaction was explained by the two variables of quality of care and support staff. The model specifies that with increases in support staff, ($B = .565, p = .000$) as illustrated on Tables 3a-c of Appendix I, there is an increase in overall satisfaction. The support subscale was defined by 3 items: quality of nursing staff, quality of ancillary staff, and quality of clerical staff.

A model with all variables entered resulted in minimal model degradation ($F = 17.56, p = .000$) as illustrated in Tables 4a-c of Appendix I but the only variables in the model that remained significant were quality of care and support staff.

Hypothesis testing using regression was also done by category of APN with results reflected on Tables 19a-c, 20a-c, and 21a-c of Appendix J. For all of the categories of APNs, the null hypothesis was rejected. Support staff was found to be a statistically significant variable for certified registered nurse anesthetists, 24.7% of the variance in overall satisfaction could be explained by support staff. For the APN category of community health nurse, quality of care was

found to be a statistically significant variable in one model, accounting for 60% of the variance in overall satisfaction. In a second model, quality of care and support staff were found to be statistically significant, accounting for 67.6% of the variance in overall satisfaction. Similar to community health nurses, the null hypothesis was rejected in the combined APN category of nurse practitioner, clinical nurse specialist, and certified nurse midwife. Quality of care was found to be statistically significant in one model, accounting for 43.6% of the variation in overall satisfaction. In a second model, quality of care and support staff were found to be statistically significant, accounting for 51% percent of the variation in overall satisfaction.

Null Hypothesis 3: There is no relationship between APNs' perceptions of autonomy, opportunities for collaboration, and overall satisfaction.

Alternate Hypothesis 3: Overall satisfaction is a function of APNs' perceptions of autonomy and collaborative opportunities.

The null hypothesis is rejected. Multi-variate model building was performed using SPSS Version 7.5 for Windows (1996) regression (step-wise) using the variables autonomy and collaboration. Two models were produced. The first model ($F = 23.182, p = .000$) as illustrated in Tables 5a-c of Appendix I, contained one statistically significant variable, total autonomy: 21.8% of the variance in overall satisfaction was explained by this model. The model is based on $n = 85$. The model had an adjusted $R^2 = .209$ (R^2 adjusted for sample size and number of variables); that is, 20.9% of the variation in overall satisfaction was explained by total autonomy. The model specifies that with increases in perceptions of autonomy ($B = .173, p = .000$), overall satisfaction increases. Total autonomy was defined by all 30 items on Part IV of the survey

instrument and reflects the APNs' perceptions of abilities to practice autonomously in their facilities.

A second model was generated ($F = 16.592, p = .000$) as illustrated on Tables 5a-c of Appendix I and contained two statistically significant variables, autonomy and collaboration: an additional 7% of the variance in overall satisfaction was accounted for by the addition of the variable, collaboration. The model is based on $n = 85$. The model had an adjusted $R^2 = .271$ (R^2 adjusted for sample size and number of variables); that is, 27.1% of the variation in overall satisfaction was explained by the variables of autonomy and collaboration. The model specifies that with increases in APNs' perceptions of collaboration and autonomy, there is an increase in overall satisfaction. However, the addition of the variable, collaboration, produces minimal effect ($B = 7.502E-02, p = .006$). Collaboration was defined by the 20 items in Part V of the survey instrument and reflects the perceptions of APNs that they have opportunities for collaborative relationships in their facilities.

The full model with all variables entered (not step-wise) resulted in minimal model degradation ($F = 16.592, p = .000$) from the first step-wise model and the same results as in model two of using step-wise regression, as reflected on Tables 6a-c of Appendix I. Both autonomy and collaboration remained statistically significant.

Hypothesis testing using regression was also done by APN Category as reflected on Tables 22a-c, 23a-c, and 24a-c of Appendix J. The null hypothesis was rejected in the analysis of certified registered nurse anesthetists. Autonomy was found to be statistically significant, accounting for 30% of the variance in overall satisfaction. The null hypothesis was also rejected

in the analysis of community health nurses and in the analysis of the combined APN category of nurse practitioner, clinical nurse specialist, and nurse midwife. Autonomy was found to be statistically significant for community health nurses, accounting for 41.4% of the variance in overall satisfaction. In a second model with community health nurses, autonomy and collaboration were found to be statistically significant, accounting for 52.8% of the variance in overall satisfaction. Autonomy was found to be statistically significant, accounting for 18.9% of the variance in overall satisfaction of the combined APN category of nurse practitioner, clinical nurse specialist, and nurse midwife.

Null Hypothesis 4: There is no relationship between APNs' perceptions of autonomy, opportunities for collaborative relationships, and overall satisfaction, and intent to remain in the AMEDD.

Alternate Hypothesis 4: The intent to remain in the AMEDD is a function of APNs' perceptions of autonomy, opportunities for collaboration, and overall satisfaction.

The null hypothesis is rejected. Multi-variate model building was performed using SPSS version 7.5 for Windows (1996) regression (step-wise) using the variables of autonomy and collaboration. Two models were produced. The first model ($F = 7.933, p = .006$) as illustrated on Tables 7a-c of Appendix I, contained one statistically significant variable, overall satisfaction: 9.6% of the variance in intent to remain in the AMEDD was explained by this model. The model is based on $n = 77$ since 8 APNs had no response for the dependent variable, intent to stay in the AMEDD. The model had an adjusted $R^2 = .084$ (R^2 adjusted for sample size and number of variables); that is, 8.4% of the variation in intent to remain in the AMEDD was explained by the

APNs' overall satisfaction. The model specifies that with increases in overall satisfaction ($B = 8.819E-02, p = .006$), there is an increase in intent to remain in the AMEDD. Overall satisfaction is defined by six items on Part II of the survey instrument: overall professional practice, current setting, extent that expectations are being met, potential to achieve goals, learning opportunities, and opportunities to help form policy.

A second model ($F = 4.459, p = .038$) as reflected on Tables 7a-c of Appendix I, contained two statistically significant variables, overall satisfaction and collaboration: 14.7% of the variance in intent to remain in the AMEDD was explained by this model. The model is based on $n = 77$ since 8 APNs had no response for the dependent variable, intent to remain in the AMEDD. The model had an adjusted $R^2 = .124$ (R^2 adjusted for sample size and number of variables); that is, 12.4% of the variation in intent to stay in the AMEDD was explained by the variables of overall satisfaction and collaboration. The model specifies that with increases in overall satisfaction and decreases in collaboration (overall satisfaction: $B = .117, p = .001$ and collaboration: $B = -.00189, p = .038$), there is an increase in intent to remain in the AMEDD.

A model with all variables entered resulted in minimal model degradation ($F = 4.267, p = .008$) and the only variables that remained significant were overall satisfaction and collaboration as illustrated on Tables 8a-c of Appendix I.

Hypothesis testing using regression was also done by APN category as reflected in Tables 25a-c, 26a-c, and 27a-c of Appendix J. The null hypothesis could not be rejected in the analysis of certified registered nurse anesthetists or with the combined APN category of nurse practitioner, clinical nurse specialist, or nurse midwife. In analysis of community health nurses, the null

hypothesis was rejected. Overall satisfaction was found to be a statistically significant variable, accounting for 22.8% of the variance in intent to remain in the AMEDD for community health nurses.

Power Analysis

Munro and Page (1993) stated that the probability level (or level of significance) and the power of a test are important factors to consider. There is a greater chance that the null hypothesis will be rejected (or a statistically significant result will be reported when such a difference exists in the population) when a more powerful test is used (Munro and Page 1993). Power analysis is used to determine the sample size needed to achieve a power of .80. Similar to the use of alpha = .05 as the convention for significance, Cohen and Cohen identified .80 as the convention for power (Cohen and Cohen 1983). To determine the sample size needed for a power of .80, a population r of .30 was declared, since .30 is a conventional definition of medium effect size. The null hypotheses was tested with an alpha (two-tailed) of .05 and sample n = 87. Using the Power of Significance Test Table of r at .03, alpha = .05 (two-tailed), it was found that there is a 76% chance that the statistical tests will be significant and the null hypothesis rejected. The result of 76% is close to the conventional 80% for power as stated by Cohen and Cohen (1983).

Reliability of the Survey Instrument and its Subscales

Internal consistency can be measured by calculating a Cronbach's coefficient alpha. It reflects the homogeneity of the scale or "how well the items complement each other in their measurement of different aspects of the same variable or quality" (Litwin 1995, 24). Cronbach's

alphas were calculated for Part II (job satisfaction scale and six subscales), Part IV (autonomy scale), and Part V (collaboration scale) of the survey instrument. As not all respondents completed all items of the survey, there were missing responses. Cases with missing values for any of the items on the scale or subscale were excluded from analyses in SPSS. This is reflected in the different values of n= number of cases described in the following paragraphs.

A Cronbach's alpha of .8799 (n = 25 cases) for the 22-item job satisfaction scale was calculated. This was slightly lower than the Cronbach's alpha calculated by Mays et al. (1996) in the Primary Care Demonstration Project (alpha = .93). Cronbach's alphas were also calculated for each of the subscales of job satisfaction as follows: reward subscale with 2 items = .7288 (n = 80 cases); overall satisfaction subscale of 5 items = .7729 (n= 86 cases); quality of care subscale of 6 items = .6426 (n = 43 cases); clinical time subscale of 3 items = .7831 (n = 83 cases); support staff subscale of 3 items = .7629 (n = 77 cases); and personal time subscale of 2 items = .3847 (n = 43 cases).

A Cronbach's alpha of .8928 (n = 63 cases) for the 30-item autonomy scale was calculated. This was somewhat higher than the findings of the Primary Care Demonstration Project of alpha = .86 (Mays et al. 1996) although lower than the findings of Dempster (1990) with alpha = .95. There were no subscales on the autonomy scale.

A Cronbach's alpha of .9762 (n= 81 cases) for the 20-item collaboration scale was calculated. This was similar to the findings of the Primary Care Demonstration Project (Mays et al. 1996) of alpha = .96, King and Lee's (1994) finding of alpha = .97, and Stichler's (1990) finding of alpha = .96. There were no subscales on the collaboration scale.

CHAPTER 4

DISCUSSION

The purpose of this chapter is to discuss the findings in relation to the research questions and to identify implications and limitations of the study. Discussion will begin with APN respondents' characteristics and job tasks and will proceed to a discussion of the variables of satisfaction (to include overall satisfaction, rewards, quality of care, personal time, support staff, and clinical time), autonomy, collaboration, and intent to remain in the AMEDD.

Respondents' Characteristics and Job Tasks Variables

Although all five categories of APNs were represented in the sample, clinical nurse specialists (n=6) and certified nurse midwives (n=1) were very poorly represented and there was no attempt made to report findings based on the five APN categories given this uneven representation. As discussed in Chapter 3, clinical nurse specialists and certified nurse midwives were combined with nurse practitioners and reported in aggregate. Geographic locations included three outside the continental U.S. and three within it and large and small AMEDD facilities. However, it cannot be assumed that these facilities and locations are typical of all AMEDD facilities. Only APNs working in AMEDD facilities were surveyed and therefore the findings may not be generalizable to APNs in other military services or to APNs working in civilian health care

settings. For example, community health nurses are not included as a category of APN in civilian nursing organizations. The mean age of respondents (41.7 years) may reflect nurses entering the military after several years of civilian practice and/or nurses waiting several years after completion of the baccalaureate degree to enter graduate school. The majority of APNs were mid-rank officers, that is, captains to majors, with less than 18% in the rank of lieutenant colonel or colonel.

Although a majority of respondents have a master's degree in nursing, almost 20% do not hold a graduate degree. This may reflect earlier minimal educational requirements of APNs. Most academic programs and state nurse practice legislation for nurse practitioners require master's degrees in nursing, although this has only been a recent development. In addition, Army community health nurses are not required to have a graduate nursing degree to practice as community health nurses.

The majority of respondents had six or fewer years of experience as APNs. This is congruent with the majority being in the ranks of captain and major. However, it is also suggestive of a fairly inexperienced group of APNs in the AMEDD. There was no information gathered on how many non-practicing APNs of more senior rank were currently in the AMEDD but no longer in APN positions. It would be interesting to explore several questions--"Do APNs frequently leave APN positions after two or three assignments and at the rank of lieutenant colonel?" "If so, how does this impact mentoring and development of inexperienced APNs?" "How does this impact on quality of patient care?"

Although APNs discuss concerns with promotion opportunities and competitiveness if they remain in APN roles, respondents were equally split between perceiving the APN role as

helpful or not helpful for promotion. It was also noted that 11 APNs gave no response to the item of promotion opportunities for those remaining in APN roles. Perhaps APNs are less concerned with a negative impact on promotion opportunities than they had been in the past. With the rapid growth of military managed care and the increasing demand for primary care providers, APNs may now perceive greater opportunities, to include promotion opportunities, than in the past.

Many respondents noted multiple ways that workload was being captured at their facilities, but the majority did not perceive current methods as being adequate. In addition, almost one-third of the respondents did not feel they were being fully utilized as APNs, although no inference could be made regarding specific barriers to utilization. It was interesting to note that few voiced the complaint common to health care providers, of having too many non-clinical tasks. Unlike reports cited in the review of the literature, few respondents reported limitations due to lack of prescriptive authority or specific credentials. This may be related to less restrictive practices in the military than in some of the States' nurse practice acts.

According to the professional literature, APNs are involved in research activities. However, in this sample, over 70% stated they were not engaged in any research related activities. This is disconcerting since APNs, as direct care providers, are in prime positions to impact patient care through research related activities. If APNs are not engaged in research activities, how are less experienced nurses in the AMEDD to understand the value of nursing research and its impact on patient care? Lack of time was identified as a significant barrier to engaging in research by the majority of APNs. Perhaps the organizational structure of AMEDD facilities

needs to include a greater focus on the importance of research activities by clinicians in general, to include APNs.

Although no attempt was made to explore any relationship between APNs' perceptions of an "ideal assignment" and intent to remain in the AMEDD, respondents did identify characteristics of the "ideal assignment." Some of the desirable attributes are unrelated to monetary resources, such as supportive supervisor, administrative support, and collegial relationships. Organizations could examine their current environments for ways to enhance these variables that impact APNs' perceptions of an "ideal assignment."

Intent to Remain in the AMEDD

Although almost 70% of Army respondents stated they intend to remain in the AMEDD, it is of concern that another 28% are uncertain or strongly disagree. Studies such as this one can assist AMEDD leadership to discover factors that positively impact on APNs' decisions to remain in the AMEDD, thus decreasing organizational turnover, potential impact on patient care, and costs related to recruiting and/or training additional APNs.

A correlation was found between reward (defined as salary and non-salary benefits in items 16 and 17 of the survey instrument) and intent to remain in the AMEDD and weaker correlations were found between clinical time and intent to remain, support staff and intent to remain, and overall satisfaction and intent to remain. Using regression, reward was found to be statistically significant as a subscale of satisfaction in predicting intent to remain. Overall satisfaction was also found to be a significant predictor of intent to remain, although less variance

in intent to remain could be attributed to overall satisfaction. With the addition of collaboration, greater variance could be explained in intent to remain than with overall satisfaction alone. However, reward alone explained greater variance than the combined variables of overall satisfaction and collaboration. A negative coefficient for collaboration indicated that as APNs' perceptions' of collaborative relationships decreased, their intent to remain increased or, as APNs' perceptions of collaborative relationships increased, their intent to remain in the AMEDD decreased. This is a counter-intuitive finding that could not be explained.

Interestingly, research reports in the civilian nursing literature do not support the findings of this current study regarding the importance of rewards on turnover or intent to remain in a position. However, in a study of U.S. Army Dental Corps officers' quality of life issues influencing decisions to leave or remain in the Army, it was found that pay and esprit de corps were significantly related to the decision to remain on active duty, with the strongest correlation between pay and intent to remain (Hays, Johnson, Moran, and Seeman, 1995).

Satisfaction and Satisfaction Subscales

Although all subscales of satisfaction (reward, overall satisfaction, quality of care, clinical time, personal time, and support staff received a score above a 50% satisfaction rate, none of the subscales scored above a 75% satisfaction rate. Correlations were found between overall satisfaction and all other subscales of satisfaction with the strongest correlations between quality of care and support staff. Using regression, quality of care was statistically significant in predicting overall satisfaction. Support staff (quality of nursing, ancillary, and clerical staff)

increased the percent of variance that could be explained by quality of care in overall satisfaction. Regression studies also found that autonomy is statistically significant in predicting overall satisfaction. With the addition of APNs' perceptions of collaboration in the regression studies, a greater percent of the variation in overall satisfaction could be explained.

In an unpublished study by Martin, job satisfaction of APNs (nurse practitioners and nurse midwives only, n=96) was examined. Although he used different instruments from those used in the present study, Martin found little correlation between personal and work background factors and job satisfaction and only "mildly significant correlations with specialty, military rank, and patients per day" (Martin, personal communication, Nov. 1996). Martin also stated that, "The negative correlation for rank may reflect dissatisfaction with career progression prospects for senior APNs who remain in clinical practice as opposed to management." Although not specifically examined in this study of APNs, responses to the item on APNs' perceptions of promotion opportunities (equally split between perceptions of APN roles being helpful for promotion and not helpful for promotion) did not indicate APNs concern regarding career progression in the APN role. Martin found "strong positive correlations" between satisfaction with the Nursing Department and satisfaction with physician acceptance.

Autonomy

A mean score of 121 on the autonomy scale indicated that respondents perceived they generally could function autonomously in their roles. Overall satisfaction was found to be correlated with perceptions of autonomy. (See discussion of autonomy under satisfaction in the

preceding paragraphs). This study supports Mays et al. (1997) statement, "As a global measure of autonomy, total scores on the [autonomy] questionnaire should be related to provider satisfaction."

Acorn, Ratner, and Crawford (1997), in their study of decentralization as a determinant of autonomy, job satisfaction, and organizational commitment among nurse managers, hypothesized that autonomy would directly influence job satisfaction, which would then influence commitment to the organization. Their findings supported this hypothesis. In addition, they stated that their, "results add strength to the claim that individual workers should have autonomy over their work," with their review of the literature supporting the effects of autonomy on job satisfaction (Acorn, Ratner, and Crawford 1997, 57).

Collaboration

Similar to autonomy, a mean score of 77 indicated that respondents generally perceived that collaborative opportunities existed in their practices. Overall satisfaction was found to be positively correlated with collaboration. However, this study found an inverse relationship existed between collaboration and intent to remain in the AMEDD. As stated earlier, this is a counter-intuitive finding and is not reported by other researchers.

Mays et al. (1997) found a relationship between collaboration and job satisfaction; providers with the least satisfaction reported the least collaborative relationships and those most satisfied reported the most collaboration. These researchers also cited Stichler (1990) who found collaboration among peers to be related to job satisfaction. Torgersen and Chamings (1994)

studied collaborative relationships between anesthesiologists and certified registered nurse anesthetists. They stated, "Working relationships are not a tangential issue; they are a key part of ensuring quality for both patients and providers" (Torgersen and Chamings 1994, 140). King and Lee stated, "Empirical evidence indicates that collaborative care has a positive impact on patient, nurse, and organizational outcomes..." (1994, 331). They studied 98 Navy nurses and 98 Navy physicians in intensive care units using Stichler's Collaborative Behavior Scale (the instrument adapted by Mays et al. and used in this study of APNs). King and Lee found that although both groups perceived that collaborative practice exists, physicians perceived greater collaborative practices than did nurses. In their review of the literature, King, Lee, and Henneman (1993) found that although collaboration has been identified as important in health care today, there is a lack of consensus on the definition and the essential elements of collaborative practice. Further research into collaboration and its impact on satisfaction, intent to remain in an organization, and patient care is needed.

Summary of the Variables

APNs' satisfaction with the quality of care they were able to provide, satisfaction with support staff, and perceptions of autonomy were the variables found to be most strongly significantly related to overall job satisfaction. However, reward was found to be the variable most strongly related to intent to remain in the AMEDD.

Although Kravitz, Thomas, Sloss, and Hosek (1993) studied job satisfaction among military physicians rather than APNs, it is interesting to note some similarities. They found

physicians were least satisfied with salary (only 19% were very or somewhat satisfied) and nonsalary rewards of the military. Satisfaction with quality of clerical support staff and ability to help form policies was also low. There was a relatively high satisfaction with the quality of care they were able to provide and personal time. The mean global (or overall satisfaction subscale as it was titled in this study of APNs) fell approximately midway between very satisfied and very dissatisfied. Using linear regression, Kravitz et al. found that physicians with the highest combined satisfaction scores of global (overall) satisfaction and satisfaction with rewards were three times as likely to report an intention to remain in the military than those with lowest combined scores. The study by Kravitz et al. used data from a 1988 survey of 1,392 physicians at 22 military medical treatment facilities.

In this study of APNs, variables influencing satisfaction and intent to remain in the AMEDD are potentially remediable by providing higher quality of support staff and employing management techniques to enhance perceptions of autonomy. Increasing salary rewards and nonsalary rewards would be difficult, but such incentives as specialty pay for APNs (that exists for certified registered nurse anesthetists and has been recently initiated for Army nurse practitioners), may enhance satisfaction and intent to remain in the AMEDD, for eligible APNs. Further research on the impact of APNs' perceptions of collaboration on job satisfaction and intent to remain in the AMEDD is needed, especially given the unexplained inverse relationship of collaboration and intent to remain in the AMEDD.

Limitations

The lack of random sampling limits the generalizability of results. Even though the respondents represented APNs from large and small size medical treatment facilities in the AMEDD and from facilities in Europe and the continental U.S., only one region of the U.S. was included and no respondents were from overseas areas of the Pacific or Alaska. Given the possible differences in leadership philosophies of the different regions, some responses may reflect only region-related differences. Another limitation is related to size of the sample. Although power analysis found the sample size adequate to achieve a power of close to .80 (power = .76), the subcategies of APNs were not equally represented. For example, of the 87 respondents, only six were clinical nurse specialists while 30 were nurse practitioners. This is interesting in light of the numbers of clinical nurse specialists in the AMEDD (N=221) and the numbers of nurse practitioners in the AMEDD (N= 199). Although disappointing, the number of certified nurse midwives' responses (n=1) was not surprising, given there are only 16 certified nurse midwives in the Army Nurse Corps. Demographic and APN category information was included in the reporting of descriptive findings, but this study did not examine correlations between demographic data and categories of APN and the subscales of satisfaction, autonomy, and collaboration.

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

In 1996, the Institute of Medicine concluded a study titled, *Nursing Staff in Hospitals and Nursing Homes: Is It Adequate?* In this report, recommendation was made for “expanded use of registered nurses with advanced preparation including both clinical nurse specialists and nurse practitioners...advanced practice nurses can provide cost-effective care especially for patients with complex management problems” (Martsolf 1996, 222). The need to contain healthcare costs and increase the focus on healthcare (and preventive services) instead of medical care (and illness related services), has led to managed care initiatives which often include increased use of APNs.

O’Malley, Cummings, and King (1996) stated that the role of the APN in most settings, is not fully understood. This limits the full utilization of APNs. To expand or increase the use of APNs in the AMEDD, a thorough understanding of APNs, their activities, perceptions of their jobs, the influence of variables (such as rewards, collaboration, and autonomy) on job satisfaction, and their intent to remain in (or leave) the AMEDD, is needed. This study was an effort to add to the body of knowledge on APNs in the AMEDD. Both descriptive and inferential in design, the study showed that at least several variables can be influenced to positively impact APN

satisfaction and intent to remain in the AMEDD. Descriptive statistics provided a large amount of information regarding scope of job tasks, involvement in organizational activities, and career and demographic variables (i.e., rank, gender, etc.).

Recommendations

Similar studies of APNs in the AMEDD should use a sampling design allowing for random sampling of a representative group including all categories of APNs at all AMEDD facilities. Demographic data such as gender, age, marital status, and number of dependents should be examined to determine their relationship to intent to remain in the AMEDD and to satisfaction. Variables associated with military service such as length of service and rank should also be examined. With a greater number of respondents in all categories of APNs (especially needed are greater numbers of clinical nurse specialists and certified nurse midwives), a similar study to examine satisfaction, collaboration, autonomy, and intent to remain in the AMEDD by all five categories of APNs, could be done. This study did not examine differences between the six facilities and respondents' satisfaction, autonomy, and collaborative relationships. Such an examination could lead to the identification of organizational structures and processes that may be linked to high satisfaction, collaboration, and autonomy of APNs.

Although trends in civilian healthcare clearly point to increasing utilization of APNs, future studies must focus on both a cost-benefit and cost-effectiveness analysis of APNs in the AMEDD. As stated by Nugent and Lambert, both methods of analysis are "widely accepted methods for demonstrating whether or not cost savings can be achieved without sacrificing

quality" (1997, 31). In their research on methods of analysis, Nugent and Lambert discussed a model by Nichols that predicted the cost of underusing nurse practitioners as \$8.75 billion annually in the U.S. This cost of underusing nurse practitioners was related to restrictions on scope of practice and other consequences of "denied access for consumers" (Nugent and Lambert 1997, 32). Several questions must be raised regarding potential "costs" of underusing APNs in the AMEDD. First, are the actual and potential contributions of APNs being recognized? Second, are APNs utilized to the fullest extent possible in the AMEDD? Third, does the AMEDD have the correct number and "mix" (by APN category) of APNs and APN positions? Fourth, what would be the potential benefits and risks for the AMEDD with an increased use of APNs? Finally, what are the potential barriers to increased use of APNs in the AMEDD?

O'Malley, Cummings, and King (1996), writing in the context of civilian healthcare organizations, suggest strategies to eliminate barriers to APN practice. Similar strategies may be needed in the AMEDD. Senior leaders in the Army Nurse Corps must lead discussion within the AMEDD on greater use of APNs. Discussion must include identification and removal of barriers to utilization, and must focus on the benefits for the AMEDD.

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